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THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

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FIFTY-SECOND YEAR

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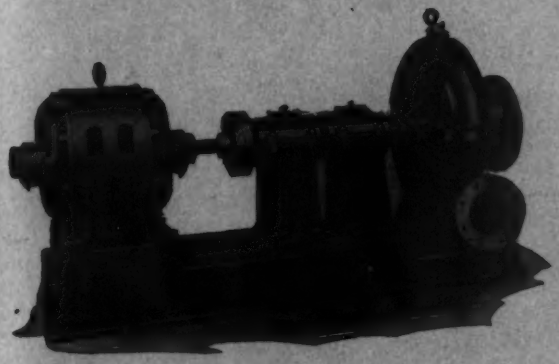

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PAPER TRADE JOURNAL

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FIFTY-SECOND YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL CO., INC.

LESLIE R PALMER, PRESIDENT — GEO. S MACDONALD, VICE-PRESIDENT & TREAS. — F. K. HOPPIE, SECRETARY

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CHICAGO, 431 S. Dearborn St. BOSTON, 127 Federal St.

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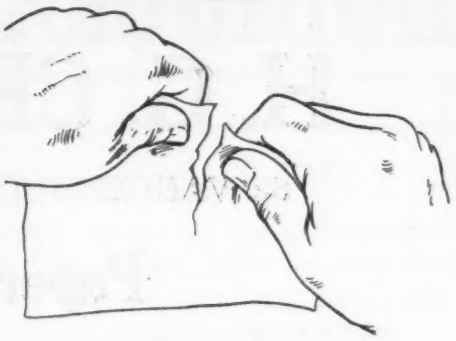

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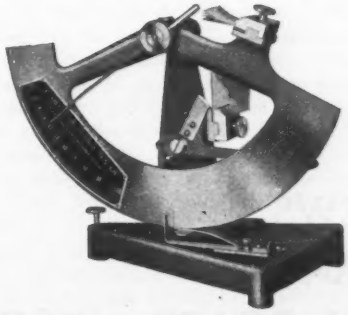

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PAPER TRADE JOURNAL

Vol. LXXVIII No. 24 NEW YORK AND CHICAGO Thursday, June 12, 1924

HADLEY MILL PROPERTY SOLD AT BANKRUPTCY SALE

Louis A. Deiters, Representing Jointly The Adirondack Power and Lighting Co. and The Guarantee Co. of Maryland, Gets Property for $253,000—C. E. Wait, Only Other Bidder, Said to Represent Adirondack Trust Co. and Iroquois Pulp and Paper Co.—Lack of Assurance as to Title Causes Lively Tilts and Almost Overthrows Sale—Mr. Deiters Declines to Announce Buyers' Plans.

Robert P. Stephenson, referee in bankruptcy, at his office at 32 Broadway, Monday, sold the paper mill properties and water rights known as the Hadley Mill of the Durham Paper and Pulp Company and the U. S. Paper Manufacturing Corporation.

The successful bid was $253,000 and was made by Louis A. Deiters, representing jointly the Adirondack Power and Lighting Company and the Guarantee Company of Maryland, the former being interested in the water power and the latter in the mill and assets.

The sale, however, was not consummated until a lively session had been held before Referee Stephenson, at one stage of which the consummation of the deal was threatened to be overthrown, when the successful bidder hesitated to go through with the purchase because of lack of assurance as to a perfect title of the property and when the only other bidder threatened to withdraw his bid because of certain intimations made by counsel for Deiters.

The properties are located at Hadley, N. Y., at the intersection of the Hudson and Sacandaga rivers and consist of a large and well equipped paper mill, railroad siding, mill dwellings, garage, etc., and a dam and valuable riparian rights on the Hudson river.

About fifty interested persons attended the sale, most of whom were creditors. Announcement was made that a written bid had been received offering $252,500 for the property. The bid was put in by C. E. Wait and while it was not disclosed for whom he was actually acting it was later intimated and not denied that he was acting for the Adirondack Trust Company and the Iroquois Pulp and Paper Company of Thomson, N. Y.

When further bids were called for, Leo Oppenheimer, counsel for Deiters, bid $253,000, announcing that the bid was for Mr. Deiters, nominee jointly for the Adirondack Power and Lighting Company and the Guarantee Company of Maryland.

The referee asked Mr. Wait if he would raise the bid and he replied that he would not. No other bids were forthcoming and then the fireworks were started when Mr. Oppenheimer inquired regarding the title to the property.

Trustee Charles A. Marshall informed him that Mr. Wait's bid was made without any question as to title.

It was Mr. Oppenheimer who then intimated that Mr. Wait might have advantage of a first hand knowledge that his client did not possess and in such a case he did not think that his client should be embarrassed. He intimated that Mr. Wait was acting for the Adirondack Trust Company and the Iroquois Pulp and Paper Company whom he said had long been angling to get hold of this property.

Mr. Wait replied that he did not possess any such first hand knowledge.

"Are you an officer of the Adirondack Trust Company?" asked Mr. Oppenheimer.

"I am not," replied Mr. Wait.

"Are you an officer of the Iroquois Pulp and Paper Company?"

"No."

"Have you a brother who is an officer of the Adirondack Trust Company?"

"No."

"Have you a brother who is an officer of the Iroquois Pulp and Paper Company?"

"Yes."

Mr. Kinney of the Adirondack Power and Lighting Company then addressed the referee. He said that he did not feel that his company and the Guarantee Company of Maryland were justified in paying $253,000 for "a pig in a poke." In fact, he said, the charter of his company would not permit its officials to do business in that way.

"I feel," said Mr. Oppenheimer, "that if the trustee knows of any flaw in this title that he should tell us. He has had plenty of time to know all about this property."

"We know of no serious flaw," replied the trustee.

Mr. Kinney then said that as far as the money was concerned they were willing to put it up but that he felt they should have ten days to investigate the title.

Mr. Oppenheimer thought that ten days would be too short a time to complete a thorough search of title. Here Referee Stephenson raised an objection when he called attention to the fact that authority for sale of the property would expire on June 15.

Trustee Marshall said that inasmuch as Mr. Wait's bid was made without raising any question as to title he would seriously object to any delay for the mere sake of $500. Such a delay might leave them without any buyer.

Mr. Oppenheimer then turned to the referee. "Surely," he said, "you would not ask us to pay $253,000 for 'a pig in a poke' as Mr. Kinney has termed it. The honor of this court is involved as well as the sale of this property."

Mr. Oppenheimer and Mr. Wait then got into a lively passage at arms which was interrupted by counsel for the trustee who offered to give Mr. Deiters 24 hours to satisfy himself as to the validity of title.

"Your generosity is pathetic," retorted Mr. Oppenheimer, "we could not determine any such question in 24 hours."

Here Mr. Wait got up and said he would withdraw his bid. The trustee urged him to let it stand and Mr. Kinney said he did not want Mr. Wait to withdraw because of anything which had been said.

"Our position," said Mr. Oppenheimer, "is that we are the largest

(*Continued on page* 63)

NEWS PRINT NERVOUSNESS TOUCHES MONTREAL EXCHANGE

Sharp Reaction in Price of Shares Reflects Sensitive Situation in the Industry—Attitude of W. R. Hearst Said to Figure in Annoying Problem—Report of Pulpwood Commission Will Probably Be Presented This Month—Carthage Machine Co. Locating Plant at Belleville, Ont.—Premier Taschereau Tells Financiers That Canada Welcomes American Capital—and Even Invites It.

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, QUE., June 9. 1924.—There has been a sharp reaction here during the past week in the price of some of the shares of the leading news print companies listed on the Montreal Exchange, and this is taken to indicate the sensitive situation in the industry brought about by recent large increases in production. There was a general understanding here a few weeks ago that the manufacturers had faced the problem of over-production by agreeing to curtailment to a moderate extent to the end that the $75 per ton rate need not be disturbed. It was argued that no advantage was to be obtained by price reduction as the volume of business could not be increased and that the producers will feel but very slightly the small reduction in output which would be entailed. For instance, it is understood one company arranged matters so that it could make reduction fit in with necessary mill repairs after a lengthy period of high pressure capacity production. This mill would thus be killing two birds with one stone. The new situation which has arisen is understood to have cropped up from an unexpected quarter. In fact it constitutes an entirely new problem so far as the eastern manufacturing position is concerned and there are strong hopes that the efforts which are now afoot to adjust it will be successful but until this is done the market may be expected to reflect nervousness.

According to current gossip this refers to W. R. Hearst, whose publications throughout the United States constitute the largest individual bill for news print in the world. He is credited with ambitions to force the price down to $70 per ton which would mean a saving of several millions a year to his company. If Mr. Hearst signs up for $75 per ton news print the trouble in the present instance will be over. Notwithstanding this hitch Canadian producers contend that the situation is much better than is generally imagined.

Pulpwood Commission's Report

The report of the Royal Commission on Pulpwood, which has been taking evidence all over the country in regard to the proposed embargo on pulpwood cut on private lands, is expected to be presented in Parliament some time during the present month. There is considerable speculation over the probable contents of the reports, some being of the opinion that a uniform policy for all the provinces will not be recommended, but that the policy should be adapted to suit each particular province. Such a course is open to the objection that federal policy must apply alike to all the provinces. As far as the action of Parliament is concerned, it cannot mean one thing for one province and another for another. It must apply to all alike. The idea of levying an export tax on shipments of pulpwood is said to be gaining more favor than the proposal for an embargo. At the same time, as long as the settlers continue to oppose so strongly the placing of any restriction in the way of selling their pulpwood to whomsoever they will, it is unlikely that the present Government, dependent as it is on Progressive support, will run any chance of alienating them.

New Paper Machine Plant for Canada

The Carthage Machine Company, Carthage, N. Y., makers of pulp and paper-mill machinery, are locating a branch factory in Belleville, Ont., where they have purchased the entire plant, property and lands of the J. C. Wilson Manufacturing Company Limited. The Canadian company will be known as the Carthage Machine Company of Canada, Limited. F. S. Wilson, president and principal stockholder in the J. C. Wilson Manufacturing Company, has been appointed vice-president and general manager of the Canadian company. A. K. Hinds, general manager of the parent concern, is president and A. E. Wardwell, president of the parent company, is secretary-treasurer. The Wilson plant which the new company have taken over is easily adaptable to their needs. It includes a modern manufacturing plant which was used for the building of water-wheels and transmission machinery. The main buildings were erected in 1916 and are of the latest construction, of brick and steel with wired glass windows, concrete floors and equipped with heavy cranes and modern machinery. The plant is located at the entrance of Belleville harbor and has sidings connecting it with the Canadian Pacific and Canadian National Railways. The Carthage Machine Company were founded in 1889. Their principal products are pulp and paper shredders, wood washers, ship screens, pulp grinders, wet machines, wood crushers, grinder valves, plug machines, core-cutting and punching machines, sulphur burners, cylinder moulds, savealls, thickeners, ball-bearing blow valves, cast iron pipe and fittings, bronze and lead work and other special lines. Among their recent developments is the manufacture of machines for making bags and envelopes.

Quebec Invites American Capital

"We have already some American capital invested in this province, but we will be glad to get more," said Premier Taschereau in addressing a group of sixty-six United States financiers, who have been touring the province as guests of the Shawinigan Water & Power Company, and inspecting the pulp and paper plants and other enterprises in the St. Maurice Valley. "I invite the American interests to invest more cash in this province. The province of Quebec has legislation and economical conditions which assure entire protection to outside capital," added the Premier.

Mattagami Pulp and Paper Co. Running Full

F. C. Clarke, of Toronto, who is treasurer for the receiver of the Mattagami Pulp and Paper Company, Smooth Rock Falls, Ont., recently paid a visit to the plant and reports that the company has been operating at full capacity since the first of the year and is turning out about 4,000 tons of unbleached sulphite monthly. The conditions at the mill are generally good and there has been no power trouble to speak of. The company hopes within the next few days to get its wood drive down the Mattagami River. This will comprise about 40,000 cords from the company's own limits and, in addition, some 10,000 cords are being contracted for with settlers who have got out the wood during the winter. While the market on bleached sulphite is weak, the company is disposing of its products chiefly across the line.

Nature Overcoming Budworm

"Nature has been working hard to overcome the budworm," R. O. Sweezey, the well-known Montreal engineer, is quoted as saying. Mr. Sweezey points out that on discussions of this menace in the past, the ravages have been greatly overestimated because experts' observations were usually confined to the lower levels along rivers and lakes, and as balsam is most plentiful in such localities, a very bad impression was created. If investigations had been pursued further inland, and into the more remote regions, the same conditions would not have been found, because black and white spruce predominates in such regions.

Sales of Wood Pulp in Sweden

WASHINGTON, D. C., June 10, 1924.—It is estimated that well over 300,000 tons of sulphite and 120,000 tons of sulphate wood pulp were sold up to the middle of March for delivery during 1924 according to a report received from the American Consul Walter A. Leonard at Stockholm. Prices, however, are stated locally to be rather low in relation to the cost of production.

CHICAGO BUYERS OPERATE ON CONSERVATIVE BASIS

Demand for All Varieties of Paper, With the Exception of News Print, Is Slow and Price Concessions In Some Cases Are Being Made to Effect Sales—Wrapping Paper Especially Is Slow and Merchants Are Meeting Each Other's Prices Where Competition Is Keen—American Paper Stock Association Postpones Meeting—Pilcher-Hamilton Co. Hold Sales Luncheon.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, June 9, 1924.—Conservatism in all buying on the part of paper consumers is ruling the market here at the present time. Book papers, bonds, ledgers, writings, coarse, paper stock and practically every branch of the industry come under its influence, some being more seriously affected than others. While there is no general spirit of optimism and plenty of reason for pessimism, the latter is not prevalent, although the harder hit are apt to be a little low in spirit. But most factors feel that business will resume a better stride shortly when some of the political unrest begins to quiet down.

Book papers are weaker in demand now than they have been in the last few weeks. Large orders are scarce and the bulk of business done by Chicago merchants on this item is reported by them to be for small quantities. Printers are in no better position to buy than they were a week ago. With less business available, there is greater competition with consequent price concessions being pretty freely granted to the retail trade, depending, of course, upon the celerity with which orders are being booked by individual retail houses.

Out-of-Stock Business in Writing Is Fair

It is said that spot business on fine writing is more encouraging by far than the mill business, although even this is not what it should be by any means. The last ten days in particular has shown some little improvement in the former, while the month of May for all houses here handling writings did not turn out as well as was expected. Prices are fairly well stabilized in both bonds and writings, in the face of decreased demand from printers and lithographers. It is stated that the cost of manufacture at present will not permit lower figures.

News print seems to be holding its own. At least it does not appear to be so hard hit as the other lines. However, there is not a great deal of activity in its sale within the city. Outside interests are taking quite a bit, but most of it for this purpose, handled through the merchant, goes out in small lots. Large consumers are on a contract basis.

Wrapping Paper Has Little Sale

Wrapping paper, of all the varieties of paper, is perhaps less active in sales. Constant, redoubled effort is being found necessary to make a suitable showing. Firms which have heretofore held up well under the strain found their May volume woefully under what is should have been. This is not wholly a surprise for it has become harder to land a prospect of late. Reports are to be heard of high-grade stock being sold to consumers for considerably less than anyone expected it could be sold for right now. Merchants are meeting each other's prices where competition is keen and there are very few orders that are not sought by at least two or three houses.

Rumors are on foot here that some of the board mills are closing down this week for from two to four four weeks. Several have already shut down because of lack of business. This will probably be only for the month of June and perhaps a part of July, with a resumption after that on a better basis.

Of course, this also reflects on paper stock dealers who likewise report no business. Prices are standing at the low level of last week and no doubt will remain there until some activity comes back to the industry, which should be in the course of a month or so.

American Paper Stock Association Postpones Meeting

The regular meeting of the American Paper Stock Association which was scheduled for May 31 at the Lexington Hotel, was postponed almost at the last minute because the attendance promised to be extremely light in view of the fact that most respresentatives were enjoying the opportunity which the holiday afforded them to get out of their usual environments. Secretary Francis Hughes was himself out of the city. Therefore, the meeting will probably not be held until the last business day of June. Due to the depressed condition of the trade, there does not seem to be any immediate need of a meeting, therefore, the postponed one will no doubt be passed up.

Pilcher-Hamilton Salesmen Meet

It is a custom with the Pilcher-Hamilton Company, at 340 N. Dearborn street, to hold a sales luncheon on the first Thursday of each month at the Union League Club, where Sales Manager E. A. Hall, Jr., has been a member for some years. At this monthly conference every salesman is present. It convenes at 12 o'clock noon and adjourns at two p. m. Each month a special sales drive is conducted on some particular line of paper carried. The sales force is divided into two teams with a captain for each. The team having the highest sales for that line gets a prize, as well as the captain who gets an individual prize. Then the individual salesman who has the highest number of points gets a prize.

At this meeting the team headed by Otto Wittekind won the team prize, while Captain Wittekind was given a brand new straw hat. The high man was M. G. Treadwell, who was absent on account of sickness. The other team was headed by John De Vos. This contest was for high sales on Hollingsworth & Whitney manila and bond, and Green Core gum tape made by the Mid States Gum Tape Company. During June special effort will be put forth in the same way on Nibroc kraft and Nibroc Towel made by the Brown Company. Ban K. Babbitt, of the Brown Company, was present at the meeting to offer any suggestions on the sale of these products. The largest number of new accounts will be a third feature of the contest.

Henry W. Borchardt, one of the salesmen, and editor of *Bookan-Wrap*, the house organ of the Pilcher-Hamilton Company, was chairman of the meeting, introducing Mr. Babbitt and Mr. Hall, Jr., and also presenting the prizes. Mr. Hall called upon every man for his opinion on general conditions and any suggestions that might better the business. The Nixie campaign, now being conducted by the company as a follow-up on the activity of the United States postoffice in reducing the number of poorly wrapped packages going through and which have been named "Nixies" by the postoffice. This is a mail campaign, calling the paper prospects' attention to the Nixie propaganda of the postoffice and stating that packages properly wrapped with wrapping paper handled by the Pilcher-Hamilton Co. will carry safely. There are five pieces to this campaign, after the third of which, comes a piece announcing the name of the salesman. Several figures had already been crossed off and the next lower one marked up. Interested pedestrians congregated about the window all during each day evidently with the intent of beating the other follow to it but still at a low enough figure. This stirred up considerable favorable comment and, incidentally, while people were looking at this filing cabinet, they had a chance to see other items in the window which they may have needed.

Don Hanly Joins I. P. Bureau of Tests

[FROM OUR REGULAR CORRESPONDENT.]

GLENS FALLS, N. Y., June 9, 1924.—Don Hanly recently with P. T. Coolidge Consulting Forest Engineer of Bangor has joined the staff of the Bureau of Tests, International Paper Company, at Glens Falls.

PHILADELPHIA FINE PAPER DIVISION SLIGHTLY BETTER

Other Branches of the Paper Industry Do Not Share in Improvement, However—Coarse Paper Men Study the Cost of Distribution—Fine Paper Dealers Discuss Ways of Bettering the Paper Industry—Dubin Paper Co. Takes Possession of Larger Quarters—Penn Card and Paper Co. Purchases Warehouse—Arctic Sweetheart Carton Corporation in Bankruptcy—Roofing Plant Fire.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., June 9, 1924.—Opening days of June brought a brighter outlook for a few dealers in the fine paper division of the trade but the betterment did not extend to the other branches of the industry.

While the actual picking up in the business of the fine paper houses was confined principally to the various grades of writing papers such as bonds, covers and ledgers there was some evidence of a renewed interest in other lines through more inquiries for future deliveries. With the advent of summer there is not likely to be any great activity because of the normally dull season prevailing throughout July and August and the betterment is believed to be just a temporary spurt to replenish diminishing stocks.

With the coarse paper dealers very little evidence is forthcoming of renewal of interest on the part of general industry and the entire market is merely marking time. A few small orders are being placed for hand to mouth consumption but these are rather a liability than an asset because of the high overhead cost in delivery service.

Paper stock warehouses have had ample accumulations during the week owing to the absence of demand for all grades. There is no set market, dealers still dickering with mills for whatever can be had.

Coarse Paper Division Meets

The cost of distribution, which just now is the very important factor in the paper market, generally, because of the small lot buying prevalent for many months, and the frequency of trips necessary to take care of deliveries will occupy the interest of the coarse paper dealers at the monthly meeting to be held in the Bourse this week by the Coarse Paper Division of the Philadelphia Paper Trade Association. The subject will be taken up in open forum discussion during the luncheon hour, a notice having been sent to the dealers informing them in advance that the topic of the session is to be "How Can The Cost of Distribution Be Simplified."

Fine Paper Dealers in Session

"Ways and Means for the Betterment of the Paper Industry" was the leading topic of the discussion of dealers of the Fine Paper Division of the Philadelphia Paper Trade when they met at the Bourse Restaurant last Thursday and talked over present slackening of business. It was particularly stressed that dealers adhere to trade ethics in these days of keen competition and that the high standard of fair dealing both in relation to trade association and to customers be maintained in order to keep the industry on the high plane of business conduct which has been developed through the Association. Means of reducing overhead were talked over and there too "delivery" was the principal difficulty in keeping down the cost. Many suggestion were placed at the disposal of the Association by its members and these will be taken up at a later meeting for the purpose of developing some solution to the problem either on a co-operative basis or individual plans. The members extended to the new President Morgan H. Thomas, who was elected the previous week to the chief executive office of the Association, its wishes for a pleasant vacation upon which he was about to embark. Mr. Thomas, who is Vice President and general manager of the Garrett Buchanan Company, sailed Saturday for Europe.

President Leon Beck Ill

Leon Beck head of the Beck Paper Company, is confined to his home in Cynwyd, Pa., suffering from a sudden illness. Mr. Beck was taken ill while on a visit to the mills in Springfield, Mass., and was obliged to return home immediately upon his arrival there. Since that he has not been able to leave his bed.

Kennedy Company Opens Office

A Philadelphia sales office has been acquired by the Kennedy Car Liner and Bag Company, in the Commonwealth Building. The local branch will be under the management of Hugh English who will supervise the distribution in this territory of the firm's line of paper liners for cars and large size bags adapted to furniture, piano, clothes, automobiles, containers and other purposes not ordinarily manufactured by the general bag plants. The firm's manufacturing plant is located at Shelbyville, Ind.

Dubin Paper Co. in New Home

Larger quarters have been secured by the Dubin Paper Company, for its coarse paper, bag and twine business. The firm has taken possession of the building at 3212 Ridge Avenue for a sales office and store and removed there its stock of coarse papers, roll products, wrappings and twines.

Penn Card and Paper House Purchase Warehouse

The large warehouse at 129 North Broad street, part of which was occupied by the Penn Card and Paper Company, has been purchased by Meyer Magill, proprietor of the Penn Company. The building was purchased for $50,000, and upon the expiration of the leases to other tenants, will be devoted to storage purposes for the Penn Company's products. The firm now occupies three floors in the building.

New Sayford Summer Specialties

Summer specialties now being offered as entirely new lines by the Frank M. Sayford Paper Company, through its local offices in the Drexel Building, consist of crepe embossed Club Napkins, adapted for high class trade and packed for the first time in boxes for home uses. They are packed in 100 lots in attractive display boxes, formed into squares, for the stationery and department store trade. The doilies too have been provided with a new package size of 312 to a box in a complete paper service for table use in the summer months. A ten cent package of napkins, put up in glassine envelopes for the 14 inch tea size napkin, is packed ready for picnics, automobile parties or other outing purposes and have been in great demand in this section.

Carton Concern in Bankruptcy

An involuntary petition in bankruptcy has been filed by the creditors of the Arctic Sweetheart Carton Corporation, a firm which recently began business at 3079 Helen street. The firm was engaged in the production of ice cream cartons and other paper products of like character.

Fire in Roofing Plant

An overheated roofing compound in the oxidizing building of the Certainteed Products Corporation, 2nd and Venango Streets, caused a fire which did considerable damage to the building before it was brought under control. The speedy action of the fire fighters prevented what might have proved a disastrous fire due to the storage of a large amount of chemicals used in the manufacture of roofings.

Charles L. Huff Confined to Home

Following a long illness due to an infection of the throat and ear, Charles L. Huff, well known in the local trade as the former head of the Huff Paper Company, is confined to his home 331 S. 43rd St.,

(*Continued on page 66*)

MATHIESON System

Liquid Chlorine and the Mathieson System Is Easily Adapted to Any Bleach Equipment

SO adaptable is the Mathieson System and its two basic principles, that any existing bleaching powder equipment may be readily converted to the use of liquid chlorine. These two principles are (1) the use of predetermined, accurately weighed quantities of all materials, and (2) the utilization of the refrigerative effect of the vaporizing liquid chlorine to counteract the heat of reaction of the chlorine with the lime. Overchlorination is avoided, absolutely uniform liquors are produced, and the temperature of the solution is kept within safe limits at all times.

The second principle is taken care of by an expansion coil installed in the chlorinating tank, which is immersed in the liquor and in which the liquid chlorine vaporizes. The accurately weighed unit of liquid chlorine is the Mathieson One-Ton Container, or in some small installations, the 150-lb. cylinder. The Mathieson Multi-Unit Tank Car, carrying fifteen of these one-ton containers, is an important part of the Batch Method for producing bleach liquors from liquid chlorine.

In adapting the Batch Method to existing bleach plants, the first consideration is the available tank capacity. Where individual tanks have not the required capacity to operate on the unit basis with one ton of liquid chlorine, two or more tanks have been connected together and the piping so arranged that the system operates as a unit. In such cases the expansion coil is required in only one tank, although the liquor is circulated through all the tanks in the system.

Proper control of temperature conditions permits a wide range of tank capacity while the ton container remains the standard unit of liquid chlorine. The safety limit of the finished liquor is 100° F., and as there is a definite rise in temperature in the liquor for each unit weight of chlorine absorbed, the initial temperature of the solution must be controlled accordingly. For example, with a tank capacity as low as 2400 gals. and a chlorine unit of one ton, the initial temperature must be not more than 50° F., and the concentration of the liquor produced will be 80 grams per liter of chlorine. On the other hand, with a tank capacity of 9600 gals. and a chlorine unit of one ton, the initial temperature may safely be as high as 85° F. and the concentration of the liquor will be 25 grams per liter.

Let us send you a reprint of "Bleach Liquors From Liquid Chlorine," by J. H. MacMahon, our Technical Representative, which describes the Batch Method in detail.

The MATHIESON ALKALI WORKS Inc.
25 WEST 43rd STREET NEW YORK CITY
PHILADELPHIA PROVIDENCE CHICAGO CHARLOTTE

EAGLE THISTLE PRODUCTS

Deal Direct with the Manufacturer

Bicarbonate of Soda
Liquid Chlorine-Caustic Soda
Sesquicarbonate of Soda
Bleaching Powder-Soda Ash

NATIONAL CONTAINER MEN MEET AT DRAKE IN CHICAGO

Numerous Important Questions of Special Importance to the Container Industry Are Discussed by Representative Men —Interesting Report on General Business Conditions Given by Dr. E. O. Merchant—J. E. Clenny Gives Outline of the Early History of the Container Industry—Charles Dillon Speaks on Railway Legislation and the Indifferent Majority—Next Meeting in Atlantic City.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, June 9, 1924.—Celebrating its first anniversary, members of the National Container Association convened at the Drake Hotel, Chicago, May 20 and 21, in one of the best gatherings yet held. The association was organized at a similar meeting just one year ago, on May 22, to be exact, at the Drake Hotel. At this session, pertinent questions confronting the various divisions of the organization were rebated and action taken. President John L. Barchar presided at the sessions on Tuesday, and Vice-President Gaylord took the chair on Wednesday.

First of all, the association voted a subscription to the fund for the erection of the new Chamber of Commerce Building in Washington, D. C. The members of the National Container Association felt it quite fitting that an appropriation be made to this worthy cause.

Interior Packing Reports With Photos

To make the reports of packages designed at the association laboratory of greater value to members and shippers, arrangements have been made whereby these reports with details specifications will be supplemented with photographs of the article packed as recommended by the association engineers. This, of course, is with the idea that the packing principle evolved for a specific article may be used by member manufacturers in designing containers and interior packing for similar articles.

Mr. Barchard on Corrugated-Packed Shipments

President Barchard, having recently made a trip to the West Coast for the purpose of making observations of shipments packed in corrugated and solid fibre boxes, reported at the meeting the result of his findings. He examined a number of shipments in the warehouse, in the holds of ships and on the docks, which had been forwarded by all-rail and by rail and water. He mentioned that the boat lines have almost entirely discontinued the use of net slings and are now using slings of the platform type, which are much more satisfactory. He felt that both corrugated and solid fibre containers have made great strides in the last year or two in coastwise and overseas service, and predicted that in a very short time many of these boxes will be in Trans-Atlantic and Trans-Pacific service.

Browder on Association Progress

General Manager Browder, of the association, explained in detail several changes in, and additions to Rule 41, Consolidated Freight Classification No. 3, for which the National Container Association has petitioned, and which are now pending before the Consolidated Classification Committee. He also reported in detail upon certain changes in the Bureau of Explosives specifications, some of which have been made effective and others which are proposed. All of these matters are closely watched to see that the interests of the fiber container industry are given full and careful consideration. Mr. Browder mentioned that in addition to the extensive drum tests of containers packed with Strike-Anywhere Matches, the Chicago laboratory has recently designed containers and packing for several different articles. While the manufacturers of these articles had not previously been using corrugated or solid fiber containers, the tests showed up so well that they adopted the engineers' recommendations.

It was announced by Chairman J. P. Brunt, of the Sales Promotion Committee, that the two special representatives, C. I. Spade and H. D. Keeler, are now actively in the field. He outlined the several major and minor projects assigned to each man. The program outlined by this committee was well received by the members of the association and was accepted with thanks. Members of the committee besides Mr. Brunt are: J. J. Brossard, J. M. Connor, Geo. W. Gair and Irving Hill.

Statistical Committee Reports Definite Work

A detailed report of the meeting of the Statistical Committee, which was held on May 19, in Chicago, was presented by Chairman Fletcher M. Durbin. He particularly mentioned a recent questionnaire sent to members, pointing out that the results were of considerable value. A second questionnaire is to be sent out along the same lines and he requested that members give favorable attention to it so that the summary of responses may be as broad as possible.

The detailed report of the Statistical Committee was presented by Grafton Whiting, Statistician.

A most interesting report on general business conditions was given by Dr. E. O. Merchant, the association's economist. He supplemented his report by references to graphic charts.

Recommendation on Cloth Tape

The recommendation of the Standardization Committee, presented by Chairman Clarence J. Schoo, for a definite procedure to arrive at more effective standards for cloth tape, was adopted by the membership. He also submitted the committee's recommended Standard Mill Specifications. This was fully discussed and the committee's report approved.

This committee was authorized to confer with related industries with a view to adopting specifications which will be mutually satisfactory to all interests and it is expected that a report of their further activities along this line will be ready for consideration at the July meeting.

The Special Inspection Committee, headed by J. J. Brossard, reported upon inspection activities since the appointment of the committee a few week ago. A meeting will be held of its members sometime between now and the July Meeting.

J. E. Clenny Outlines Early History

At the Tuesday session, considerable time was devoted to a discussion of conditions in the industry by the members. Practically all participated in it. J. E. Clenny, of the Sefton Manufacturing Company, Chicago, recited the history of the container industry since corrugated board first came into use as a material for interior cushioning for liquids in glass, in answer to the demand by shippers for a clean, satisfactory packing material to take the place of excelsior and how that use had grown to the tremendous volume now being manufactured for practically every line of industry.

Railway Legislation

A most interesting and enlightening address on the subject "Railway Legislation and the Indifferent Majority," was delivered by Charles Dillon, Assistant to the Chairman, Western Railways' Committee on Public Relations, following the luncheon on Tuesday. Mr. Dillon particularly emphasized the fact that it is the duty of every business man to take effective steps with a view to defeating certain ill-advised and dangerous legislative measures now pending in Congress, much of which will, if enacted, react to the detriment of American business. He characterized some of these bills as destructive to commerce and industry generally and he urged the greatest consideration to see that Congressmen and others elected represent the will of the majority. He stressed the point that the "Indifferent Majority"—the responsible citizens of the country who are not taking the interest in politics that they should—can change the present situation by taking a new, live interest in the candidates for whom votes are to be cast.

FAMOUS PRODUCTS SERIES NO. 26

KVP

Made in the World's Model Paper Mill

The Valley Size Tester

1. Gives an accurate unit of measure for sizing.
2. Keeps size more constant during a run and from run to run.
3. Makes a saving in size and alum possible.
4. Is easy to handle and makes the test quickly.

A pamphlet will give you more information about the Valley Size Tester. It is yours on request.

The Valley Size Tester *is used in making* Kalamazoo Vegetable Parchment Co. *products*

Known the country over as the "World's Model Paper Mill," and famous for its parchment, waxed and bond papers, the big plant of the Kalamazoo Vegetable Parchment Co. is of course carefully equipped and operated.

The reputation of their widely used papers must be maintained and no guesswork goes into their manufacture. That is why the Valley Size Tester occupies an important place in their large laboratories. The sizing in their papers must be *right*. They appreciate the fact that uneven sizing makes for poorer printing qualities.

The Valley Iron Works Co.

Plant: APPLETON, WIS. *New York Office:* 350 MADISON AVENUE

COMMISSION ON PULPWOOD UNLIKELY TO REPORT SOON

Commissioners Find Task of Collaborating and Weighing Evidence Taken in Various Parts of Canada a Much Heavier Task Than At First Anticipated—Fred L. Ratcliff, Just Returned From England, Praises Canadian Pulp and Paper Exhibit at the British Empire Exhibition—Great Lakes Paper Co. Starts One Hundred and Eighty Ton Ground Wood Pulp Mill at Fort William.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ontario, June 9, 1924.—The report of the Royal Commission on Pulpwood is not likely to be brought down during the present session of Parliament, as was expected, according to rumor heard in Toronto paper circles. It is stated that the present administration at Ottawa is not anxious to have the question of an export embargo, or otherwise, projected into the political arena at the present time as enough debatable and time-delaying matters have been thrashed out this session in the shape of the tariff, the sales tax, the budget, etc., and that legislators are anxious to get to their homes before the real warm weather sets in.

Another reason is said to be that the commissioners have found the task of weighing and collaborating the evidence taken in various parts of the country to be a much heavier task than they at first anticipated, although they have spent several weeks in going over the data submitted. It is asserted that the secretary has pretty well prepared his report but the members of the Commission have much to take into consideration before making final recommendations in detail to the Government. While the sittings of the Commission are not likely to be prolonged to any great extent, still the report it is declared will not be officially submitted for some months to come.

Will Handle Many Wood Contracts

The Thompson & Heyland Company, of Toronto, are large dealers in pulpwood, have recently bought the timber in Cox & Waldie townships on the shores of Georgian Bay, consisting of 72 square miles. The growth is principally pulpwood, ninety percent. of it being poplar, which is in growing demand by several mills on the other side of the line. The Thompson & Heyland Company will cut 20,000 cords this season on its own holdings and altogether has sold for the coming year some 35,000 cords of poplar. The firm has let the contract for cutting on their own limits in Waldie township to Joseph M. Cyre, of Midland. He has now about 200 men engaged in cutting and peeling the wood, the peeling season extending from June till the latter end of August.

The Thompson & Heyland Company will handle from 60,000 to 100,000 cords of pulpwood during the coming twelve months. This will be the largest amount they have ever undertaken. The amount of poplar is more than double last year and spruce and balsam may be in good demand although the prices are a little weaker owing to the comparatively quiet condition of the pulp and paper industry.

Mr. Ratcliff Returns from England

Fred L. Ratcliff, president of the Ratcliff Paper Company, Toronto, returned home lately from an extended visit to Great Britain and the Continent. While abroad he came in contact with many paper men, especially the distributors. He says that the industry in the Old Country is fairly prosperous although complaints are heard that competition from Germany is cutting to some extent into their profits. The cheaper papers made in England from rags, felt and papers, roofing stock, etc., have been effected by the soaring price caused by American and Canadian buyers going over there and paying big prices for the raw materials. Mr. Ratcliff visited the exhibit made by the Canadian pulp and paper industry at the British Empire Exhibition and says that the display is extremely attractive and a splendid advertisement of the resources of Canada in this line.

Great Lakes Pulp Co. Mill Starts

The one hundred and eighty ton ground wood pulp mill of the Great Lakes Paper Company, at Fort William, Ont., started operations this week. The plant is one of the best equipped on the continent and will eventually employ about two hundred and fifty hands. There are about fifteen thousand cords of wood ready and arrangements have been completed for a steady supply. Work on the new, one hundred ton paper mill will begin soon, probably this fall, on a site adjoining the pulp mill.

New Addition to Thunder Bay Mill

Work is now well under way on the new addition to the pulp plant of the Thunder Bay Paper Company, in Port Arthur, Ont. The extension is 96 x 130 feet and the new equipment will consist of three, four pocket grinders, six wet machines, three 600-ton hydraulic presses and three 850 horsepower motors. F. N. Youngman, manager of the company, states, that it is hoped to have the addition ready for operation by September. The company will also require an extra 2,500 horsepower of electrical energy. The output will be increased from sixty-five tons to one hundred and twenty a day.

Kinleith Paper Mills Close Down

The Kinleith Paper Mills, St. Catharines, which have been operating for nearly a quarter of a century in the production of book, bond and other lines of flat paper, were recently sold to the Howard Smith Paper Company, Montreal, and the plant has been closed. The production was about twenty tons daily. W. A. Anderson, superintendent of the plant, has been transferred to the Crabtree Mills division of the Howard Smith Paper Company. The Kinleith mill has for some years been operating under the handicap of high costs, owing to the absence of a suitable railway siding and unfavorable construction features and the interests behind it, which are closely associated with W. J. Gage & Co., manufacturing stationers, Toronto, decided some time ago to dispose of the plant. H. F. E. Kent, president of Kinleith Paper Mills, is also vice-president and managing director of W. J. Gage & Co., and will now devote all his time to the affairs of the latter organization.

Notes and Jottings of the Industry

H. B. Donovan, of Toronto, sales manager of the Canada Paper Company, spent a few days recently at the plant in Windsor Mills, Que. A number of employees of the firm gave up their lives in the Great War and a movement is on foot at Windsor Mills to erect a suitable shaft in memory of the fallen heroes.

E. S. Munroe, of the Wilson, Munroe Company, wholesale paper dealers and treasurer of the Canadian Paper Trade Association, and R. T. McLean, of R. G. McLean, Limited, printers, Toronto, are members of the Canadian lawn bowling team, which left recently on a trip overseas and will engage in many games with Scottish and other bowlers while abroad.

The sympathy of many friends in the paper trade is being extended to Charles S. Taylor of the sales staff of Ritchie & Ramsay, coated paper manufacturers, Toronto, in the death of his wife which took place recently.

Norman Robson, of the sales staff of the Canada Paper Company, Montreal, was married recently at the Methodist church, Verdun, Que., to Miss Jeanne Christian James, daughter of the late John W. James of St. John's, Newfoundland. Mr. Robson and bride spent their honeymoon in the Laurentian Mountains.

On petition of the J. H. Walker Company, the Lennox Paper Mills, of Camden East, Ont., were put into liquidation by the Bankruptcy Court recently. Gordon W. Scott, Montreal, was appointed temporary guardian. The company making the request produced an account for $1,092 and alleged that the mills were not able to meet their liabilities. The amount is unsecured. The insolvent concern did not oppose the bankruptcy proceedings.

Dilts-

Why Dilts Beating Engines are First

THE Dilts Machine Works, Inc., was the first manufacturer of Beating Engines to introduce:

The Rigid Lighter Bar Stand
The Bandless Roll
The Heat Treated Special Alloy Fly Bar
The Self-Dumping Beater
The Inclined Concrete Bottom Beater
The Cast Iron Back Fall Filled with Concrete
The Spring Cushioned Rigid Lighter Bar Stand
The Keyed Bandless Roll

Dilts Beating Engines are better because they incorporate more and later improvements which make for faster circulation, stronger construction, greater ease of adjustment and more thorough beating. If you are interested in increasing the production and decreasing the cost of operating your beater room write for information.

Dilts 6526

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY

Obituary

Edwin Richard Redhead

FULTON, N. Y., June 9, 1924.—Edwin Richard Redhead, president of the Victoria Paper Mills Company, whose death was briefly mentioned in THE PAPER TRADE JOURNAL, last week, was born in Brownville, Jefferson county, January 6, 1851. His early education was secured in the Brownville schools after which he attended the Ted Creek High School and Fairfield Seminary. From those institutions he went to Wesleyan University but illness cut short his course there. When Syracuse University was founded he matriculated at the university, taking an active part in the college activities and being one of the founders of the University Herald. In his senior year, 1874, he was its editor-in-chief. Upon leaving the university he turned to the legal profession but later gave up his legal studies to become a paper salesman for Forrest G. Weeks of Skaneateles. Five years later he formed a co-partnership with Mr. Weeks. They purchased the Victoria Paper Mills company of Fulton in 1880, Mr. Redhead becoming the secretary, treasurer and general manager. He secured control of the major portion of the stock in 1902 and became the president of the company, retaining that position up to the time of his death.

Mr. Redhead was one of the founders of the State Street M. E. church of Fulton, he and Mr. Weeks donating the site. His interest in and his strong support of the church had continued ever since. Mr. Redhead was for years a trustee of Casenovia Seminary and was a member of the executive committee of Syracuse University. He was also a director of the Citizens National bank. He was president of Fulton's first Chamber of Commerce and was also first president of the Fulton public library. The funeral was held at the State Street M. E. church on June 2 and the large attendance testified to the affectionate regard in which the deceased was held by the community. The burial was in Mt. Adnah cemetery. Mr. Redhead is survived by his widow.

Walter Brigham Nye

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 10, 1924.—Walter Brigham Nye, vice-president of the S. D. Warren Company, died at his home 39 Kingsbury road, Chestnut Hill, Friday of last week.

Mr. Nye was born in Worcester, February 11, 1852, the son of Samuel Daniels and Susan Brigham Nye. He was graduated from Harvard with the class of 1884. He was affiliated with the iron and steel industry for six years and from 1890 until 1898 was manager of the Cumberland Manufacturing Company, filter manufacturers.

In 1898 he became associated with the S. D. Warren Company, paper manufacturers, and in 1910 was admitted to the firm. In 1886 he married Caroline Mortimer Etheridge of Boston.

He was a director of the S. D. Warren Company, the Arkwright Mutual Fire Insurance Company, and the Marble-Nye Company of Worcester. He was a member of the Union, Brookline, Country, Harvard and Exchange Clubs. Besides his wife, he leaves a brother, Arthur E. Nye of Worcester.

Frank F. Skinner

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 9, 1924.—Frank F. Skinner died at his home 170 Linden street, Everett, Mass., Sunday May 25, 1924. Thirty-eight years ago, during a summer vacation of the Everett High School, he was employed by the Cochrane Chemical Company as a laboratory assistant. He was then eighteen years of age. Instead of returning to school to complete his course he remained with the company and during the next twenty-five years worked at various capacities, being finally promoted to assistant to the superintendent of the West department.

In 1911 he was transferred to the Boston Office for work in the Sales Department. This work brought him in close touch with the large industrial plants of New England, in many of which he was well known.

In 1917, when the Merrimac Chemical Company bought the plant of the Cochrane Chemical Company, Mr. Skinner remained in his position as salesman, and in 1923 was promoted to assistant sales manager.

In 1898 he married Miss Nellie MacKnown, of Boothbay Harbor, Maine, who survives him.

Theodore W. Easton

BRIDGEPORT, Pa., June 17, 1924.—Theodore W. Easton, manager of paper sales of the Diamond State Fibre Company, died last week as the result of an automobile accident. Mr. Easton was injured May 31 and died the same day in Montgomery Hospital at Norristown, Pa.

Mr. Easton started to work in the beater room of the Diamond State Fibre Company about ten years ago. After returning from France where he served during the war with the Twenty-eighth Division, he was made Pacific Coast manager for the concern, which position he held for two years previous to his promotion as sales manager of paper.

His loss is keenly felt not only by the Diamond State Fibre Company, but by the many friends whom he made throughout the trade.

DeGrasse Paper Co. Gets Verdict in Coal Case

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., June 12, 1924.—By unanimous decision of the Court of Appeals handed down a week ago Tuesday without opinion affirming the judgment of the trial court whereby the Northern New York Coal company of this city must pay about $85,000 to the plaintiff for breach of contract in the case of the DeGrasse Paper Company of Pyrites vs. the Northern New York Coal company, a big legal victory has been won by Attorneys Delos M. Cosgrove of this city and John G. Jackson of New York, representing the paper company after six years of ligitation.

This action which is now definitely ended having been passed upon by the highest court in the state of New York, arises out of a contract made by the coal company to sell the paper company from 30,000 to 40,000 tons of bituminous coal to be delivered between June 1, 1916, and April 1, 1917, the price ranging from $1.50 to $1.55 a ton.

Less than 19,000 tons of coal had been delivered to the plaintiff when deliveries ceased. In the meantime the price of coal had greatly advanced and the paper company was compelled to go into the open market and purchase spot coal at the market price during the period covered by the contract.

Pulp to Be Turned Over to Creditors

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., June 12, 1924.—A recommendation that 395 tons of pulp of the Carthage Sulphite Company, valued at $23,700 be turned over to the R. F. Hammond company for the benefit of the creditors has been made at a hearing before Federal Judge Cooper at Albany.

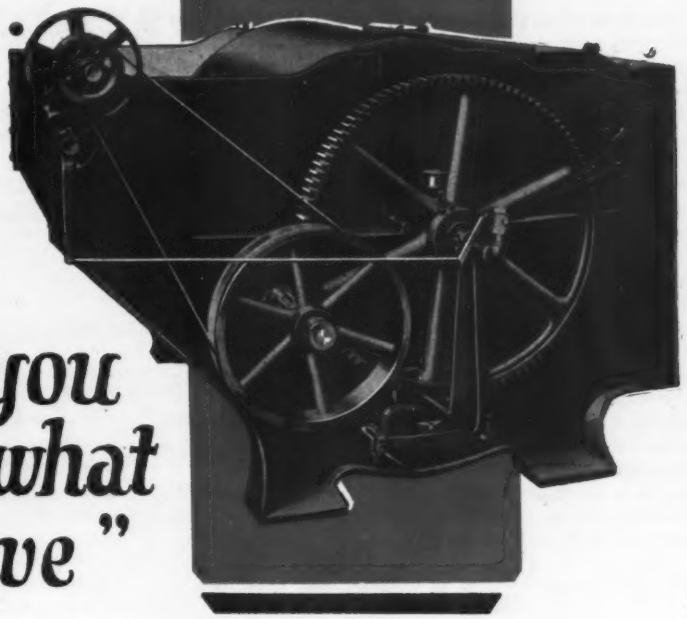
A committee selected some time ago to seek out a manager and attempt to put the company on a paying basis made the recommendation Monday.

President Signs Forestry Bill

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 9, 1924.—President Coolidge on Saturday signed the Clarke-McNary forestry bill making it the law of the land. Conservationists are said to be much pleased that they got as good a bill through Congress as the Clarke-McNary bill although it is not all they wanted.

The BIRD SAVE-ALL



"Not what you Make but what you Save"

The old slogan of the Savings Bank applies as well to the Paper Mill as it does to the individual.

There can be no argument about white water. The stock recovered means money *saved*.

Bird Save-Alls recover, in a few months, enough stock to pay for the cost of the installation, interest, maintenance and depreciation charges. After that the savings directly increase your net profits.

Let us send you some interesting facts about Bird Save-Alls.

6680

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SOUTH WALPOLE MASSACHUSETTS

Western Representative
T. H. Savery, Jr., 1524 Republic Bldg.
Chicago, Ill.

Canadian Builders of Bird Machinery
Canadian Ingersoll-Rand Co., Ltd.
260 St. James Street, Montreal, Canada

SOURCES OF PULP IN NORTH AMERICA

A Compilation of Statistics Relating to North American Resources in Wood and Woody Substitutes for the Manufacture of Paper

By George J. Druckerman

(*Continued from last week*)

Other Wood Sources of Raw Material

Under this head we might theoretically include every tree that grows and group them as follows:

1. That part of the species heretofore considered, but not specially designated as wood for pulp.
2. The rest of the stand of timber on the continent.
3. That part heretofore classed as inaccessible.

The first is easily dispatched, since we have already conceded a more than just share to the paper industry and it is scarcely likely that the future proportionate demand for lumber and other wood products is going to markedly decrease in respect to that of paper.

In the second group there is included some woods (as basswood) being used for pulp at present, and some no doubt which will be of some importance in the future. The Forest Products Laboratory at Madison, Wis., have made tests on various American woods to determine their suitability. Some of these are as follows: Various pines, cedar, redwood, palmetto, basswood, ash, tulip, alder, oak, elm, mangrove, sycamore, willow, balsa, etc.

The majority have been found capable of suitable reduction by one method or another and hence have some potentialities. Others, as the oaks, are of practically no use whatsoever.

However, these woods, because of one failing or another or difficulty in manufacture are at present little thought of in the light of pulpwood, and it is probable that of the future the same can be said.

Table 8 shows the total stand of all these kinds of wood on the continent.

TABLE VIII

Total Stand (1,000 cords) of all kinds of Wood, not listed previously, in North America

United States	1,018,000	
Canada	257,700	
Alaska	61,400	
Mexico	240,000	
Central America	650,000	
West Indies	70,000	
Total	2,297,100	thousand cords.

This total, some 2,297 million cords, is a little more than one-third of total stand of timber heretofore classed as "pulpwoods," or about one-fourth of total stand of all woods.

If we should consider one-half of 1 per cent of this total as wood that will be made into pulp (probably a most liberal estimate even though we use these woods to a far greater extent than we are at present) there will then be available some 11,485,000 cords from this source.

In the third group are trees that have been heretofore classed as inaccessible. The term inaccessible is applied to all those parts of the forest located around mountain top timber lines, in closed valleys, in swamps, in gulleys, on extended sparsely covered plains, and in the tundras of the North.

That part of the stand of timber thus classified has been estimated (in this paper) to be 42.4 per cent, on an average of the entire continent.

Improvements in logging, advance of prices, etc., warrant the consideration that perhaps 15 per cent of this will be rendered available to exploitation. This will net an increase of some 64,686,000 cords.

The following table sums up all standing raw material as considered so far.

TABLE IX

Summation of Standing Raw Material

Presently available as per Table 6	431,240,000	cords
From Secondary or substitute woods	11,485,000	"
By increased availability	64,686,000	"
Total	507,411,000	"

The stores in Central America and West Indies are not considered in this total.

Sources of Material for Pulp from Wood Waste

The importance of this source cannot be denied. Every year immense amounts of waste wood are produced during the processes of logging, milling and manufacturing.

Two authorities[9] have it that 60 per cent of the tree is wasted in the transfer to lumber, 25 per cent remaining in the forest.

The same authorities claim that there are over 8,000,000 cords of resinous wood alone, left annually (1910) as waste wood in the forests of the United States. This would be sufficient to cover our requirements for all low grades of paper, besides furnishing supplies of rosins, oils, turpentine, alcohol, etc.

Another authority is quoted as follows:

"For every thousand feet of lumber manufactured there is a waste of about one-half cord of slabs at the mill. In the manufacture of spruce, fir and hemlock there must, therefore, be an annual waste of about 1,600,000 cords, much of which is burned in incinerators."

Applying this figure of 25 per cent to all woods and assuming the total continental cut of pulpwoods to be 35,000,000 M. bd. ft. annually, the calculated production of waste pulpwoods at the mill every year is 8,750,000 M. bd. ft., or (at 2 cords per M.) 17,500,000 cords. Were it all sent through a pulp mill it would amply cover the sum of all our paper needs. However, but a small fraction is, or will ever be, destined for paper.

In 1914 United States pulp mills used 330,000 cords of wood waste, which represented 7.7 per cent of the total number of cords used for pulp.[10]

In 1920 only 3 per cent of the wood used for pulp was mill waste.

The use of slab and mill waste declined from 233,982 cords in 1917 to 154,603 cords in 1918.

It thus becomes evident that as a source of pulpwood, mill waste is not of much potency.

The 25 per cent of the tree that is left in the woods is of too meager possibilities to be considered here.

From all the foregoing information it is hoped the reader will obtain an insight into the approximate relation of the supply of our forests to the needs of the paper industry.

No conclusions regarding probable duration of supply or possible approaching state of exhaustion of our timber will be drawn here. It could be said that with present supply and present use we will have enough for another 50 years or so. But for obvious reasons, this would be mere presumption.

Woody Substitutes

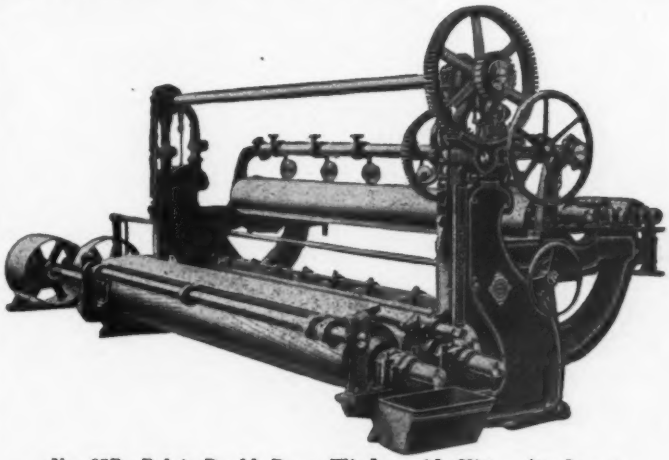
(Annual and perennial crops from which pulp manufacturers might draw a supply of raw material.)

All plants contain cellulose in varying amounts. To be useful to the paper industry the plant must not only contain a sufficient per-

[9] Veitch & Merrill—Products from waste resinous woods. U. S. D. A. (Dept. of Chem. Bul.), 159. 1913.

[10] Surface, H. E. Wood waste and other pulp woods used in 1914 by U. S. mills, Mech. & Chem. Eng. 14, p. 701.

Repeat Orders for the Beloit Double Drum Winder



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REPEAT orders can mean only one thing—complete satisfaction. Sixteen repeat orders from one mill, nine from another and batteries of four and five from many others—orders like these are recommendations that speak their own story forcibly.

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Write us for special winder information blank. It will make it simple to quote you on your needs quickly—and without the slightest obligation.

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Established Since 1858

centage of cellulose (20 per cent would be a minimum), but it must also be of sufficient abundance, concentrated growth and availability.

The great reason for the small current use of these crop plants is because of the insufficient economic demand. They are slightly inferior to wood as a source of pulp. Kellogg claims that it is not to the use of substitutes but the increased growth of wood that we should lend our energies.

Among the other shortcomings of wood substitutes is the small yield of pulp as compared bulk for bulk with wood, thus increasing cost of transportation, handling, and storage space required. Further, new mills or extensive modifications of old ones will be required to manufacture such plants into paper. Again, they are more difficult of reduction than wood, each species presenting its own problems.

A great many plants have been suggested for the manufacture of paper. Among those mentioned in the literature are the following:

Cereal straws, corn stalks, bagasse, cotton stalk, brushes, cotton linters, asparagus waste, vines, zacaton, bamboo, licorice root, sugar beet waste, peat, kelp, broom, nettle, sorghum, Henequin (Mex.) sunflower, corn cobs, Savannah waste, flax straw, sisal waste, carnauba wax waste, banana stalks, willows, hemp, blady grass, maguey (Mex.) baobob, Florida saw grass, ramie, Spanish bayonet, soap weed, etc.

Since it would be well-nigh impossible to compute the available raw material produced annually in the above plants, just a few of the more important and more promising ones will be dealt with. The data on these few will serve to lead to some idea of the whole.

Practically each plant has its enthusiastic sponsor or sponsors, who dwell on the virtues of the material and largely overlook its faults. Every so often there is an outburst of enthusiasm over the "discovery" of some new plant for paper making.

The following is taken from an article in the June 8, 1922, issue of the PAPER TRADE JOURNAL, speaking of the Henequin plant (native to Mexico):

"Mexico is destined, if all experimental results are proven in application, to revolutionize the paper manufacturing business and to relieve the drain on the pulpwoods of the northern countries; offering a substitute for them which is of easy replacement and which immense areas of land in this country are peculiarly suited to grow."

It takes a little more than our poor imagination to visualize the Henequin plant revolutionizing the paper industry in any part of the near or distant future.

However, the ardor of those experimenting with new material should not be dampened, but encouraged, since the increasing importance of woody substitutes is becoming more and more obvious to all concerned.

A list of references dealing with this subject will be found on another page.

Some of the more important materials listed by C. J. Brand,[11] who had charge of the Paper Plant Investigations, conducted by the Bureau of Plant Industry in 1909-10, are:

Corn Stalks (From Indian Corn)

About 100,000,000 acres planted each year. One ton stalks per acre. Only about one-third available for pulp.

According to Veitch and Merrill,[12] there is sufficient material produced within a radius of six miles to supply a plant with 100 tons per day for 300 days of the year.

Broom Corn

Has better fibers than above and is more suitable from standpoint of reduction, but there is only a limited amount produced.

178,000 acres planted (1899), produce about 450,000 tons of stalks.

Rice Straw

One of most promising of the crop materials. It is much used in China and Japan.

720,000 acres planted (1909), produce about 1,500,000 tons of straw.

Cotton Hulls

Brand says that they will probably never be used in paper making, because of poor quality of paper produced and difficulty of getting material free from fragments of hull.

There are others of different opinions. There are some 400,000 tons of linters potentially producible from the annual seed production. Almost one third of this is at present used for other purposes.

(The Tennessee Fiber Company of Memphis makes paper from cotton hull fibers.)

Cotton Stalks

Very large supply. 10,000,000 acres planted yearly one ton paper can be produced from every five acres of stalks.

Bagasse

Largely used for fuel at present.

(The Sugar Cane By-Products Company, of New Liberia, La., is manufacturing pulp from bagasse.)

Paul[13] says that bagasse alone can supply world's paper need.

Flax Straw

Some 2½ million acres planted yearly—producing one ton straw per acre.

Besides these, he lists plants that can be grown profitably, solely for paper, as hemp, a Japanese grass (Exulalia japonica) which grows here, and esparto.

Bamboo is a rapid-growing perennial that is attracting much attention because of its abundance and suitability. Much investigation and experimentation has been made upon it. Its chief difficulty lies in its large bulk.

For further information on these and other plants, reference is made to the literature noted in the appendix.

The purpose of this last chapter is merely to complete the picture of the available raw material. These substitutes form the background or reserve from which paper will be made as wood becomes scarcer and more costly. The situation is well expressed by La Forge[13] when he says:

"While it is not to be assumed that wood pulp ever will be completely replaced by other materials in the manufacture of paper, nor even that any other raw material will prove more important, its ever-mounting price probably would soon force the use of substitutes, even if there were no other influencing conditions."

Appendix

List of References Dealing with Substitutes for the Manufacture of Paper

Brand, Chas J.....Utilization of Crop Plants in Paper Making. U. S. D. A. Year Book, 1910, p. 329.

House of Rep.....Agr. Comm., Substitutes for Wood in Manufacture of Paper Pulp. H. Rep. 2142, 60th Cong., 2nd Session.

Thelen, Rolf.....The Substitution of other Materials for Wood. U. S. D. A. Report No. 117.
Cotton Linters for Pulp, *Paper*, June 18, 1919.

Surface, H. E., & Smith, F. H.....Paper Mills of U. S. PAPER TRADE JOURNAL, Feb. 6, 1919, p. 109. (Plant in Camden, N. J. MacAndrews & Farber Co., making pulp from licorice root by soda process).
Peat Fiber in Paper Making. PAPER TRADE JOURNAL, Sept. 25, 1920, p. 36.

Paul, A. R.....Bagasse or Paper Making Material. PAPER TRADE JOURNAL, Sept. 25, 1920, p. 36.
Paper from Kelp. PAPER TRADE JOURNAL, Dec. 9, 1920.

[11]Utilization of Crop Plants in Paper Making. U. S. D. A. Year Book, 1910, p. 329.

[12]U. S. D. A. Dept. Chem. Bul. 159, 1913.

[13]See appendix.

(*Continued on page* 64)

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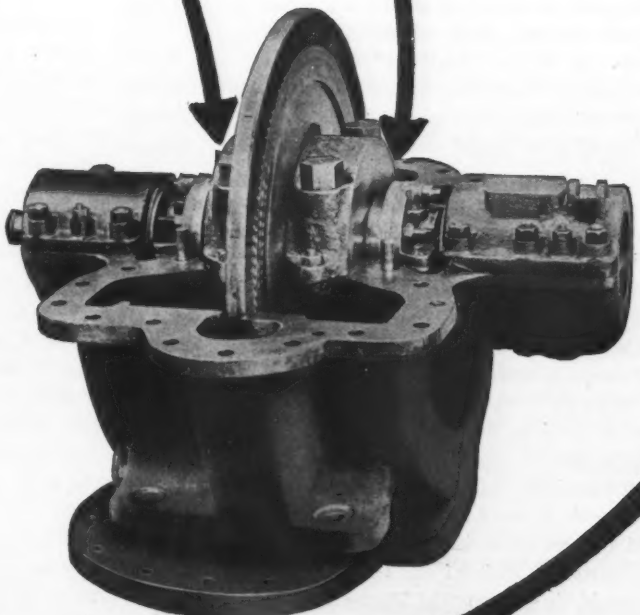
Always on guard, never apparent, the restraining rings stand behind the normal governing devices in the Westinghouse Small Turbine for generator drive, prepared for instant action and providing an insurmountable factor of safety against overspeeding due to motorizing of generator or other accidental causes. This splendidly characterizes the high state of perfection to which the small Westinghouse unit has been developed.



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Editorial

Vol. LXXVIII New York, June 12, 1924 No. 24

HENRY J. BERGER, Editor

THE INDIFFERENT MAJORITY

In a very interesting address on "Railroad Legislation and the Indifferent Majority" delivered at the annual meeting of the National Container Association in Chicago last month, Mr. Charles Dillon, assistant to the chairman of the Western Railways' Committee on Public Relations stated that there was then before Congress a group of bills affecting transportation and in consequence, the entire public, any one of which, if enacted, would be likely not only to prove extremely costly as a warning, but actually destructve to commerce and industry generally.

Mr. Dillon placed the responsibility for the possibility of such bills being passed on what he termed the "indifferent majority" and in concluding his address said:

"The indifference of the majority is quite apparent in the returns in every election, but it is most astonishingly evident in national elections, and is increasing. The regrettable thing is that this indifferent part of the population includes so many persons, men and women, whose education, business or professional training and social position make them peculiarly well equipped to use sound judgment in selecting the candidates for whom they vote. There is never any indifference in the "machine," the ward or district crowd. The crowd that has "something to put over" is always on the job. Unhappily, and unfortunately for the country, the Silk Stocking voters forget this fact, particularly if election day or the primaries come in unpleasant weather. Many of the big political bosses of these times came out of the "Gas-House" districts, and with shrewd minds and real command have walked over the heads of the Silk Stocking crowd to place and power. While the man "too busy to pay any attention to politics—beastly business anyway," goes on chasing dollars, and gas-house leaders chase the faithful of their flock to the polls and see that they vote, and vote right; which accounts for some strange faces in important positions.

"This is not an attack on Congress or upon any individual. It is merely an effort to show how some of the members happened into Washington. True, that great body contains few latter day Calhouns or Websters or Clays. You will find nothing in the early history of Congress to remind you of anything now chronicled in that alluring daily, the Congressional Record. But you will find in seats once occupied by the mighty that Woodrow Wilson would call a Little Band of Willful Men, some of whom would never have entered the halls of Congress if the Indifferent Majority had taken the trouble to study their motives and ambitions, and their social and business connections.

"Judge Martin J. Wade of the United States District Court, (Iowa) says in his book on 'The Shorter Constitution,' that 'government is the organized will of all the people.' How then, if this be true, does it happen that Senator LaFollette was re-elected by only 28 per cent of the possible vote in Wisconsin?

"What about the remaining 72 per cent of the qualified voters? Were they indifferent about the election, or too busy to vote? It has been said that Senator LaFollette, elected and re-elected, "typifies the spirit of Wisconsin." Is it not more nearly fair to say that he typifies the *minority* spirit of the state?

"How is it possible to explain the election of Senator Brookhart by only 29 per cent of Iowa's qualified voters?

"Senator Shipstead of Minneasota by 26 per cent? Senator Dill of Washington by only 17 per cent of the voters? Senator Howell of Nebraska by 32 per cent? Senator Frazier of North Dakota by 35 per cent?

"None of these public officers came within 50 per cent of the possible vote of their states; that is to say, if the Indifferent Majority had voted the results might have been wholly changed.

"Congress is not to be blamed for this situation, and certainly not the successful candidates. The fault lies with the people—the indifferent and heedless or careless in America's population, and with its peculiar views as to what constitutes government. The railroads are deeply concerned about this because whenever and wherever the people neglect to vote intelligently the cost of government increases, taxes go up, rates must rise also, complaints come from misinformed patrons, and ill-advised, destructive and ofttimes foolish legislation is enacted, especially directed against corporate wealth. 'Let the government pay it,' is a silly thing to say, but it is heard frequently. Why? President Coolidge is not the government any more than the prime minister is the government of England.

"Government is intangible. It is what the people make it, and it will never be any better than they. It will never rise any higher than the people. If they neglect the duties of citizenship then politics, which sometimes has strange bedfellows, may bring to pass conditions in Washington not pleasant to contemplate. There are signs now pointing that way. 'Oh, I say,' exclaims the indifferent man, 'I have no time to think about the railroads. What do I know about your labor bill or Section 15-A? Let the men in Washington attend to all this.'

"Intelligent business men, the heads of great commercial organizations take a different attitude. Thousands within a year have let their representatives in Congress know their views; thousands have demanded fair play for the country's railroads.

" 'They have such strange ideas in Washington,' said a steel manufacturer recently. 'I can scarcely believe our Congressman came from the West. They all change so down there.'

"In 'What Democracy Means,' Woodrow Wilson described an address he had delivered before the American Federation of Labor at Buffalo, in November, 1917. 'I was glad to get away from Washington,' said the War President. 'There are so many people there who know things are not so, and so few who know anything about what the people of the United States are thinking, that I have to come away to be reminded of the rest of the country.'

"The Indifferent Majority can change this situation by taking a new live interest in the candidates for whom votes are to be cast. 'Keep the railroads out of politics,' is a fine slogan, but a better one is 'Keep politics out of the railroads.'

"This can never be done while public men serve their own ambitions first and the public last, while a minority rules, and railroads are the jumping jacks of politics."

PAPER WAGES AND EMPLOYMENT

The depression in the paper industry is reflected in employment figures for April that have just been issued by the Bureau of Labor Statistics of the Department of Labor at Washington.

The bureau received replies from 176 paper and pulp mills which gave their employment in March as 50,237, decreasing in April to 50,125, a decrease of 0.2 per cent. The payrolls in these same mills, also, decreased from $1,356,832 in March to $1,335,463 in April, a decrease of 1.6 per cent.

Replies were also received from 154 paper box plants which gave their employment in March at 16,767, decreasing slightly in April to 16,548, a decrease of 1.3 per cent. The payrolls in these factories, also, decreased from $354,641 in March to $346,585 in April, a decrease of 2.3 per cent.

One hundred and sixty-three paper and pulp mills also replied to the Bureau's inquiry showing their employment in April of last year to have been 50,278, decreasing in the same month of this year to 46,504, a decrease of 7.5 per cent. The payrolls in these mills, also, decreased from $1,268,406 in April of last year to $1,239,169 in the same month of this year, a decrease of 2.3 per cent.

Replies were also received by the Bureau from 138 paper box factories which showed their employment in April of last year to have been 14,608, increasing in the same month of this year to 14,812, an increase of 1.4 per cent. The payrolls in these factories also increased from $298,068 in April of last year to $310,036 in April of this year, an increase of 4 per cent.

April Pulp and Paper Production Statistics

Production of paper by identical mills reporting to the American Paper and Pulp Association and cooperating organizations showed an increase of 1.7 per cent in April from the March production, according to the monthly statistical summary of the paper and pulp industry.

The tonnage summary is prepared by the American Paper and Pulp Association with the cooperation of the Binders Board Manufacturers' Association, News Print Service Bureau, Tissue Paper Manufacturers' Association, Wrapping Paper Manufacturers' Service Bureau and Writing Paper Manufacturers' Association. The figures for March are as follows:

Grade	Number of mills	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
News print	68	128,249	127,505	31,699
Book	54	84,310	84,116	31,029
Paper board	97	98,916	96,492	32,564
Wrapping	84	50,538	47,904	60,320
Bag	25	9,840	9,327	6,340
Fine	82	26,749	26,257	39,038
Tissue	43	10,574	9,964	8,051
Hanging	8	4,465	3,477	3,743
Felts	19	16,786	16,255	2,058
Other grades	63	21,874	22,476	15,279
Total, all grades	...	452,211	443,773	230,121

The statistical table below gives the number of mills reporting to the American Paper and Pulp Association and the U. S. Pulp Producers' Association, and the data as to production of the various grades of pulp in April.

Grade	Number of mills	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
Ground wood pulp	102	133,990	2,962	133,454
Sulphite, news grade	39	48,009	3,707	16,803
Sulphite, bleached	20	22,356	3,109	3,486
Sulphite, easy bleaching	5	5,822	727	1,375
Sulphite, Mitscherlich	6	6,677	796	1,125
Sulphate pulp	13	16,032	2,830	8,956
Soda pulp	12	15,670	4,085	2,392
Other than wood pulp	2	106	94	22
Total, all grades	...	248,662	18,310	167,296

Germany Losing Her Paper Export Business

BERLIN, Germany, May 17, 1924.

Editor PAPER TRADE JOURNAL:

While traveling through Europe the past two months I have had an opportunity of closely observing the actual present conditions of the German paper industry.

Future large imports of paper into the United States from Germany are not possible any more. The low prices at which Germany was able to sell previously is a thing of the past.

The currency change in Germany from the old almost worthless mark to the present gold mark basis (one gold mark equals 0.238) has caused an advance in the price of all commodities, the present average price of general commodities in Germany being equal to the prices prevailing in the United States.

Paper prices in Germany within the past two to three months have advanced from 20 to 30 per cent. The paper export business of Germany has fallen off, as a consequence of the high prices, and whatever export business Germany is taking at the present time at low prices is mainly due to her pressing need of money.

Paper production costs in Germany are at present high. German labor being well organized, an eight hour working day is maintained and constant demands for increases in wages have been made, and granted by the paper manufacturers. The cost of coal and freight has also increased considerably. A car load shipment of 15 tons of news print to the port of Hamburg from the mill with an average haul by rail of 300 miles costs about $180, against about $55 for the same haul in the United States. Money is scarce and banks refuse to make loans except at interest rates of 40 to 60 per cent.

German paper factories at the present time are unable to meet the situation until their production costs become cheaper. This does not seem possible for some time to come.

American manufacturers of paper may be happy in the thought that the former recent inroads into their business due to the previous large German exports of paper into the United States, are now past history.

Very truly yours,

S. B. BEHRENS, VICE PRES.,
James P. Heffernan Paper Co., New York.

Gets Gold Medal for News Print Record

WATERTOWN, N. Y., June 12, 1924.—For the distinction of being the first man in the history of the paper industry to produce over 100 tons of newsprint in 24 hours, William O. Dickinson, general superintendent of the Algonquin Paper Corporation of Ogdensburg, N. Y., has been awarded a gold medal by the Bagley & Sewall Company of this city, manufacturers of the paper machine which set the world's record at 102.9 tons of newsprint in 24 hours on April 24, 1924.

The medal was formally presented to Mr. Dickinson by Stuart D. Lansing, president of the Bagley & Sewall company, in the executive offices of the Algonquin mill before a group of directors of the company.

Made of solid gold by the Tiffany company about two inches in diameter and about three sixteenths of an inch in thickness, the medal has the following inscription:

"Presented by the Bagley & Sewall company to William O. Dickinson, the first man in history to produce 100 tons of newsprint in 24 hours."

On the opposite side this is inscribed: "102.9 tons made on a 204 inch machine April 24 1924 at the Algonquin Paper Corporation, Ogdensburg, N. Y."

Mr. Dickinson who is considered one of the most able papermakers in the world has been engaged in the business for the past 35 years. He was formerly for eight years connected with the Donnacona paper mill at Donnacona, P. Q., as superintendent of the machines but went to Ogdensburg with G. M. McKee, president and general manager when the mill was started.

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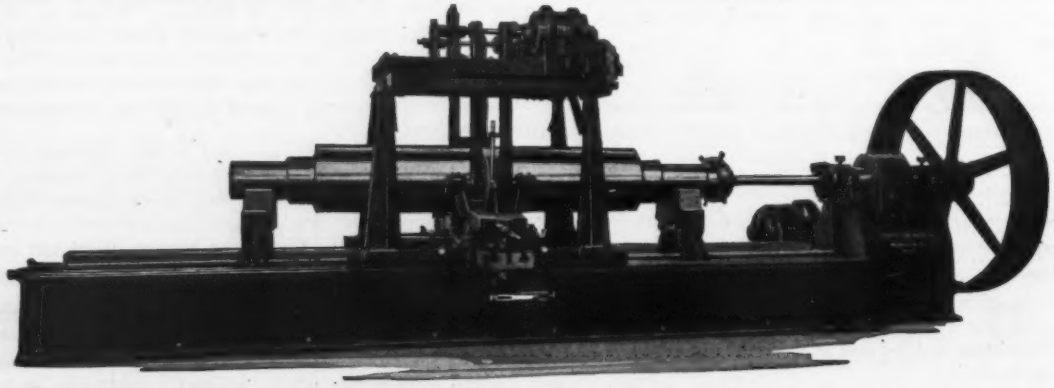

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Section of the
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AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G.MacNAUGHTON, Secretary

VALUABLE BY-PRODUCTS IN SULPHITE MILLS

By P. A. Paulson, Appleton, Wis.

The idea of utilizing that substance of the wood which is now being lost in the waste liquor from sulphite mills antidates the invention of making sulphite cellulose, for, when Bachet and Machard, way back in 1867, sought to produce sugar from wood, they incidently discovered a cellulose substance which proved suitable as a raw material for paper making, and, when Professor A. Mitscherlich experimented in extracting tannin from wood, he obtained as a by-product cellulose, glue, acetic acid and calcium bisulphite.

Dr. C. D. Ekman, who was the first to produce sulphite cellulose on a commercial scale, endeavored for a long time to make use of the substances carried away in the waste liquor, but finally gave it up as unprofitable. B. C. Tilgheman, who was the first American to produce sulphite cellulose, also pointed out the value of the waste liquor as a fertilizer and that glue could be produced simply by boiling down the waste liquor.

First Practical Method in 1874

It was in the year 1874 that the first practical method for producing sulphite cellulose was launched and during the first 15 years all energy was centered on the development of the sulphite cellulose industry; the thought of utilizing the waste liquor was, so to speak, put aside. But with the rapid growth of the industry, there soon developed a realization of the enormous waste taking place due to the fact that hardly half of the solids in the wood were made use of in the sulphite process. Moreover, the ever increasing quantities of waste liquor that were being emptied into the rivers polluted the waters, and the manufacturers were soon confronted with a rather disagreeable problem. This difficulty made itself felt most strongly in Germany and it was there that some of the most diligent workers started to devote their attention to the question and we have on record the works of Mitscherlich, Seidel and Ulzer, Drewsen and Dorenfeldt, Ekman and many others.

The first questions that naturally present themselves are: What is this waste liquor and how much of it is being produced?

Waste sulphite liquor is a coffee brown liquid having a specific gravity of about 1.05 and contains 10 to 13 per cent solids. According to analysis made by Professor P. Klason, one gallon of this liquor contains:

Lignin	0.5250 lb.
Hydro carbons	.2843 lb.
Protein	.0131 lb.
Resin and fat	.0262 lb.
Combined with lignin SO_2	.1750 lb.
Lime (CaO)	.0787 lb.
Total	1.1023 lb.

In the United States and Canada, there is now manufactured daily, approximately 8,000 tons of sulphite pulp. Since the cellulose represents only 50 per cent of the solids in the wood, it naturally follows that the total amount of solids shown in the above analysis also equals 8,000 tons daily plus sulphur and lime which have entered into the solution. There being only about 12 per cent solids in the waste liquor, it will require something like 15,240,000 gallons of water to hold the 8,000 tons in solution.

The Values of Waste Liquor

The next question that arises is: What materials with reasonable market values can be derived from the waste liquor?

Several years ago, Dr. Max Muller of Finkenwalde compiled a record of the literature published in regard to waste sulphite liquor, and he unearthed in the neighborhood of some 200 different projects for which the waste liquor may be used, among them are: dye stuffs, impregnating materials, tannin, starches, paper sizing, cement, alcohol, fuel and fertilizer.

Dr. Rinman claims to have found a method for resolving the solids in the waste liquor into methyl alcohol, acetone, light and heavy oils by means of destructive distillation. Other experiments have been made where it has been shown that 2.7 cubic feet of gas and 0.5 lb. of coke can be produced by the destructive distillation of 1 lb. of dry material obtained from the waste liquor. The gas would burn with a very intense heat and colorless flame; the coke had the appearance of gas coke although probably a higher percentage of ash. No tests were made to determine the actual heat value of either the gas or coke.

Mention should also be made of the utilization of the waste liquor for producing ethyl alcohol by fermentation, a process which is in use to quite a large extent in Europe and has also been tried in this country. By this process, however, only 20 per cent of the solids are made use of and, therefore, does not solve the problem.

The above covers only a few of the experiments that have been made to determine what valuable materials can be derived from the waste liquor. The fact that the materials contained in the waste liquor are of too great value to be allowed to be thrown away, stands out so clearly that further discussion of this question would seem unnecessary.

How Can the Waste Liquor Be Neutralized

But hand in hand with the question of what valuable by-products can be derived from the waste liquor goes the questions of how can the waste liquor be neutralized and how in a most economical way can the water be removed from the solid substances?

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It will be the purpose of this paper to deal with these questions in a more detailed manner than with the former.

When we stop to consider that in order to obtain 1 lb. of the dry substance it is necessary to remove 7½ lb. of water and coupled with this the fact that a considerable amount of free sulphur dioxide is present in the waste liquor necessitating all apparatus used for the removal of the water to be made of acid resisting material, it is evident that to reduce the waste liquor to a solid by means of the ordinary method of evaporating becomes too expensive. This might be considered the only serious drawback to the solution of the waste liquor problem.

How the Difficulty Can Be Overcome

In the following I will offer some suggestions on how the difficulty can be overcome:

When the finished cook of sulphite pulp has been emptied into the blowpit, the waste liquor is removed by allowing it to drain through the perforated bottom of the pit. It is not possible to remove all of the waste liquor by this process of draining.

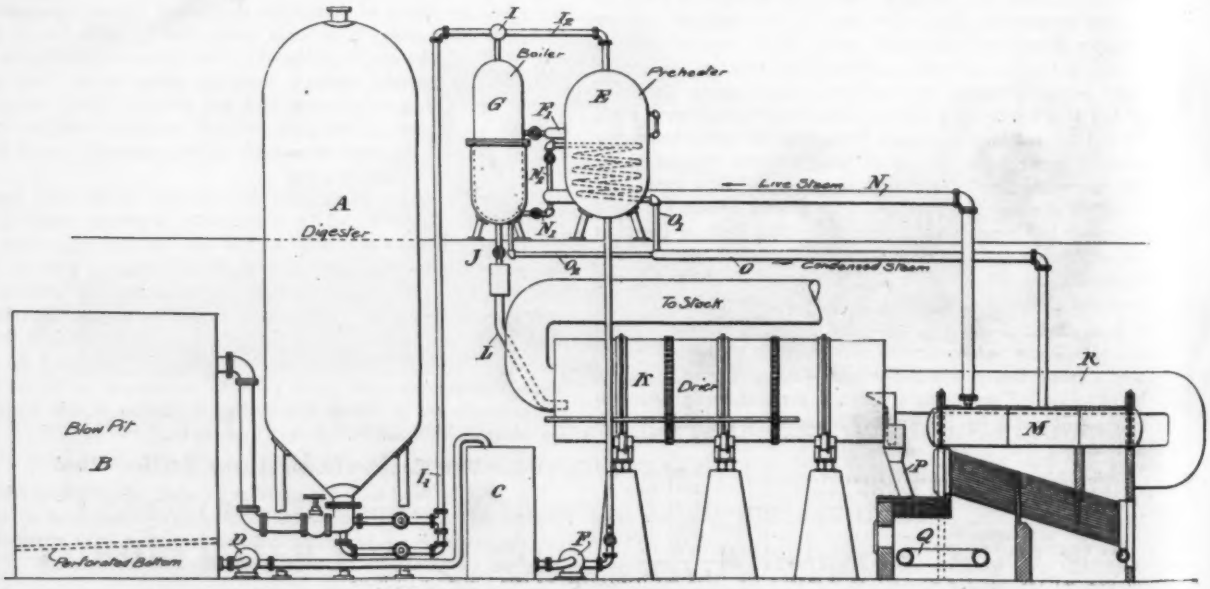
In practice it has been found that only about 1,300 gallons to the ton of pulp can be thus removed. If the value of the product should warrant the extra expense the balance could be removed by subjecting the pulp to pressure or vacuum. For the present we shall deal only with the 1,300 gal. removed by draining. It will be seen then that in the liquor from 1 ton of pulp there is 10,010 lb. of water to be removed in order to obtain 1,365 lb. of solids. To cook one ton of sulphite pulp approximately 7,000 lb. of steam is required. If we now construct an evaporator that will stand the pressure required for the sulphite digester and make it of acid resisting material so that it will stand against the action of the free sulphur dioxide present in this waste liquor, we shall, by transferring the heat from the steam that is now being used for cooking, into the waste liquor, be able to evaporate 7,000 lb. of water from the waste liquor for every ton of pulp being cooked without any extra cost. The steam thus generated from the waste liquor would naturally go direct to the digesters and with it would go all of the free sulphur dioxide. The extra savings thus effected would not be confined to the actual reclaiming of the sulphur in the gases because these gases would have a helpful influence on the cooking process so that a better quality of pulp and a higher yield would be the result.

For a successful continuous operation, it would be advisable to have a battery of four of the evaporators so that a continuous flow of the waste liquor could enter one apparatus and made to pass from that one into the second and so on. The liquor would then leave the fourth evaporator at a consistency of about 31.5 per cent. At this consistency the liquor can be taken into a drier in the same manner as is now the practice in soda and sulphate mills and the waste heat in the flue gases from the steam boilers made use of to complete the dryness.

The Proposed Method of Operation

In the accompanying sketch, I have shown the proposed method of operation. *A* represents a digester such as is commonly used in the sulphite process; *B* represents a blowpit into which the cooked pulp is blown from the digester *A*. The blowpits serve the purpose of separating the waste liquor from the pulp; the waste liquor drains out through the perforated bottom indicated by dotted lines, leaving the pulp behind. The waste liquor is then pumped into a storage tank *C* by means of pump *D*. From tank *C* the liquor is pumped to preheater *E* or to the first unit of evaporators *G* (indicated "boiler" on the sketch). The steam generated and the SO_2 gases liberated in the evaporators *G* passes to main header *I* and from there to digester *A* through pipe I_1. If preheater *E* is used a connection I_2 is made from it to main header *I*. The concentrated liquor leaves the last unit evaporator *G* (not shown in sketch) through pipe *J* and passes to drier *K* through pipe *L*. The steam which is ordinarily used for cooking the pulp in digester *A* is used for preheating the liquor in preheater *E* and evaporating in evaporators *G*. This steam is generated in a steam boiler *M*, having a firebox and grate or stoker *Q* of any suitable construction. The steam passes from boiler *M* through main steam pipe *N*, entering evaporators *G* and preheater *G* and preheater *E* through pipes N_1 and N_2 respectively. The condensed steam from preheater and evaporators leaves through pipes O_1 and O_2 and returns to steam boiler *M* through pipe *O*.

In the waste liquor from one ton of pulp that now enters the drier from the evaporators there still remains 3,010 lb. of water to be removed before we obtain the 1,365 lb. of dry solids. Our clear gain will, therefore, be 1,365 minus whatever fuel is required to evaporate 3,010 lb. of water. Since the waste heat in the flue gases from all the fuel will be made use of for this purpose, it is safe to assume an evaporating factor of at least 7½ lb. of water to the pound of fuel and we shall therefore have to deduct 400 lb. from



the 1,365 lb. leaving a net reclaimed dry substance of 965 lb. per ton of pulp produced.

The heat value of this material is 8,500 B. t. u. per pound of the dry substance, which is approximately 70 per cent of that of coal, so that if we use it for no other purpose than to replace coal, we shall have a fuel material equal to 965 × 0.70 or 675 lb. of coal for each ton of sulphite pulp produced.

The sulphur reclaimed is also worth taking into account because the waste liquor contains about 0.1 per cent SO_3 amounting to approximately 11 lb. per ton of pulp and the value of it, mixed with the steam going to the digesters is even greater than that of pure sulphur.

The Cost of Reclaiming

Let us now consider the cost of reclaiming these by-products. Let us assume that the equipment required to handle the waste liquor from a 100 ton sulphite mill will cost $120,000; from estimates made by manufacturers of such equipment the cost would be considerably less, but we must be conservative. We will say 310 working days in a year, allow 6 per cent interest on the investment, 10 per cent for depreciation, three men at $5 per day for supervision and the cost for handling the waste liquor from one ton of sulphite pulp or in other words to reclaim 965 lb. or by-products plus 11 lb. of sulphur dioxide will be as follows:

Interest on investment	$0.23
Depreciation	0.30
Labor	0.15
Total	$0.77

Any Solution Should Be Welcome

In the foregoing I have centered my thoughts almost exclusively on utilizing the solids in the waste liquor for fuel, although I fully realize that for such a purpose, the lowest values are obtained. What has been uppermost in my mind for many years is to find a method whereby the substances in the waste liquor can be reclaimed without a loss to the manufacturer. Since the objections to the dumping of the liquor into the rivers, where it is said to become a public nuisance and detrimental to the life of fish, are being made stronger year by year, it would seem that any solution that would even pay for itself would receive welcome.

When we once get the solid material separated from the waste liquor so that the research chemist can go out in the mill for samples to experiment on from day to day, I have no doubt but what the problem of resolving the material into more valuable by-products will find an early solution and I am hopeful that before many years these by-products will be helpful in putting the sulphite industry on a better paying basis than it is now.

BIBLIOGRAPHY OF PAPERMAKING FOR 1923

TAPPI Committee on Abstracts and Bibliography, Contribution No. 42.

COMPILED BY CLARENCE J. WEST, CHAIRMAN OF THE COMMITTEE, AND A. PAPINEAU-COUTURE.

(Continued from last week)

McKee, Ralph H., and Cable, D. E.
Liquid sulphur dioxide for sulphite pulp.
Paper Trade J. 77, No. 16, 101-104 (Oct. 18, 1923); C. A. 18, 466.

McNaughton, W. G.
Sulphur consumption in the manufacture of sulphite pulp.
Paper Mill 47, No. 29, 30 (July 21, 1923); Paper 32, No. 15, 5, 14 (Aug. 1, 1923); Pulp Paper Mag. Can. 21, No. 731 (Aug. 2, 1923); T. S. 77, 206.

Mayr, C., and Peyfuss, J.
Volumetric estimation of sulphur dioxide and thiosulphuric acid by oxidation with bromine.
Papierfabr. 21, 495-498 (Nov. 25, 1923).

Miller, R. N., and Swanson, W. H.
Chemistry of the sulphite process. III. Reactions of the calcium base.
Paper Trade J. 76, No. 9, 49-51 (Mar. 1, 1923); Tech. Assoc. Papers VI (1923); 73-76; T. S. 76, 163; C. A. 17, 1328.

Miller, R. N., and Swanson, W. H.
Chemistry of the sulphite process. IV. Distribution of sulphur during the cook.
Paper Trade J. 76, No. 10, 51-54 (Mar. 8, 1923); T. S. 76, 163.

Miller, R. N., and Swanson, W. H.
Chemistry of the sulphite process. V. Effect of various compositions of acid upon the yield and quality of the pulp.
Paper Trade J. 77, No. 15 51-52 (Oct. 11, 1923).

Payne, Harold J.
The production of book paper.
Chem. Met. Eng. 29, No. 19, 831-837 (1923).

Possanner, B.
Pulp and ground wood yields.
Zellstoff u. Papier 3, 131-134 (June, 1923); T. S. 77, 125; C. A. 17, 3251.

Richter, Erich.
Tests on gas from pyrites burners.
Wochbl. Papierfabr. 54, 1521-1524 (June 2, 1923); T. S. 77, 207.

Schacht, Willi.
Pulp cooking with sodium sulphite.
Wochbl. Papierfabr. 54, 2851-2852 (Nov. 3, 1923); C. A. 18, 584.

Schwalbe, C. G.
Manufacture of sulphite pulp under high pressure and with short cooking time.
Papierfabr. 21, 493-495 (Nov. 25, 1923); C. A. 18, 585.

Sieber, Rudolf.
Determination of bases in fresh sulphite liquors made from dolomite.
Papierfabr. 21, 235-236 (1923); C. A. 17, 2501.

Sieber, Rudolf.
Graphical control of combustion gases.
Zellstoff u. Papier 3, 97-103 (May, 1923); Paper 33, No. 5, 3-4, 21; No. 6, 7 (Nov. 22, 29, 1923); T. S. 77, 125.

Stafford, H. E.
Pumping system for a sulphite pulp mill.
Ind. Eng. 81, 489-490 (Oct., 1923).

Sulphite from red pine wood.
World's Paper Trade Rev. 80, 1162, 1164 (1923); C. A. 18, 467.

Sulphite pulp from pine wood.
Zellstoff u. Papier 3, 225 (1923); C. A. 18, 468.

U. S. Bureau of Standards.
Recommended specifications for limestone and quicklime for use in the manufacture of sulphite pulp. Circular No. 144. 7 p. Washington, Govt. print. off., 1923.

Wahlberg, H. F.
Reddening of sulphite pulp.
Svensk Pappers Tid. 1922, No. 22, 40; Papierfabr. 21, No.

15, 204-205 (Apr. 15, 1923); Pappen- u. Holzstoff-Ztg. 30, 308, 310 (Apr. 19, 1923); Paper Trade J. 76, No. 6, 53 (Feb. 8, 1923); Paper Makers' Mo. J. 61, No. 3, 109, 110 (Mar. 15, 1923); Dyestuffs 24, No. 3, 48-50 (Mar., 1923); T. S. 76, 163.

Sulphite Waste Liquors

du Boistesselin, Henri.
The commercial utilization of sulphite waste liquors.
Bull. soc. ind. Rouen 50, 375-381 (1922); C. A. 17, 2502.

Delaby, R.
"Sulphite" alcohol.
Bull. sic. pharmacol. 1922, 587-591.

Grasser, G.
Detection of sulphite cellulose liquors (in tanning materials).
Zeitsch. Led. gerb. Chem. 1, 377 (1922); T. S. 77, 130.

Haegglund, Erik.
The fermentation of sulphite liquors.
Svensk Kem. Tids. 35, 165-184 (1923); Papierfabr. 21, No. 35, 401-405; No. 36, 409-412 (Sept. 2, 9, 1923); C. A. 18, 466.

Harnist, Ch.
Manufacture of ethyl alcohol from sulphite waste liquors.
Chimie et Industrie, Special No., 658-663 (May, 1923); C. A. 17, 3252; T. S. 77, 207.

Harnist, Ch.
Sulphite waste liquors.
Science et Industrie 7, No. 108, 65-70 (Jan. 31, 1923).

Kleinstuck, M.
Determination of sugar in waste sulphite liquor.
Zellstoff u. Papier 3, 51 (Mar., 1923); T. S. 77, 47.

McKee, R. H.
Proper utilization of sulphite waste liquor.
Chem. Age (N. Y.) 31, 483-485 (Nov., 1923); Paper Trade J. 77, No. 15, 49-50 (Oct. 11, 1923); Paper 33, No. 2, 5-7 (Nov. 1, 1923).

Morch, K.
Utilization of sulphite liquor with an explanation of the Strehlenert process.
Tids. for Kemi og Bergvaesen 3, 44-48 (1923); C. A. 17, 3099; T. S. 77, 208.

Oman, E.
Possibility of obtaining more fractions in continuous distillation.
Svensk Pappers Tid. 26, 238-241 (1923); C. A. 17, 2781; T. S. 77, 131.

Thorbjornson, H.
Apparatus for evaporating sulphite liquors.
Svensk Pappers Tid. 25, 368-370 (1922); T. S. 77, 131; C. A. 17, 2782.

Sander, A.
Determination of the gypsum content of sulphite waste liquor.
Papierfabr. 21, No. 23, 283-284 (June 10, 1923); Chem.-Ztg. 47, 336-7 (1923); Paper 32, No. 12, 5-6, 17 (July 11, 1923); C. A. 17, 3250; T. S. 77, 131.

Vernet, G.
The "Prodor" process for the manufacture of cellulose alcohol.
Chimie et Industrie, Special No. 654-657 (May, 1923); C. A. 17, 3252.

Terminology

West, C. J.
Classifications and definitions of paper.
Paper Trade J. 76, No. 22, 49-54 (May 31, 1923); in part in Boxboard 2, No. 7, 17-19 (July, 1923).

Textiles

Heinke, W., and Rasser, E. O.
Technology of paper yarn textiles.
Color Trade J. 11, 176-179, 220-221; 12, 33-35; 168-171, 260-262; 13, 142-145 (1922-1923).

Trade

American Paper and Pulp Association.
Returning prosperity in the paper industry. Addresses at the 46th annual convention of the A. P. P. A., New York, Apr. 12, 1923.
Special Report No. 8; 48 pp.
Contents: President's Annual address, W. J. Raybold; Trade associations in industrial progress, E. W. McCullough; "The work that conquers," J. M. Beck; "Outlawry of war," W. E. Borah; "Prejudice a national defect," Nehemiah Boynton; Resolutions of the convention.

Baumgartner, A. Robert.
Brazil's paper industry.
Papier-Ztg. 48, No. 9, 160, 162 (Jan. 20, 1923). List of mills.

Beck, Edward.
The Canadian pulp and paper industry and its raw materials.
Pulp Paper Mag. Can. 21, No. 33, 813-815 (Aug. 16, 1923).

Bie, W.
Raw materials and paper markets of important foreign countries.
Pappers och Trävarutidskrift för Finland, 1923, No. 20, 286-290.

Boman, Albert.
The woodpulp industry in Sweden.
Swedish Export 7, No. 1, 6-9 (1923).

Bowman, Thomas D.
Market for paper in Mexico.
Commerce Reports, Jan. 1, 1923, 43-44.

Cameron, James A.
Few facts relative to the market requirements for paper and boards in rolls.
Paper Mill 48, No. 3, 18, 38 (Jan. 20, 1923).

Davis, Leslie A.
Finland's paper and pulp industries in 1922.
Commerce Reports, June 18, 1923, 762-764.

Foster, Carol H.
Austrian paper industry and trade.
Commerce Reports, May 14, 1923, 436-437.

Frick, Gustav Adolf.
Die schweizerische Papierfabrikation. 1923. Neuenschwandeische Verlagsbuchhandlg., Weinfelden. 6 Swiss Fr. Reviewed in Papier-Ztg. 48, 1762.

Harris, F. T.
Effect of the new Russian economic policy on the paper industry of North America.
Paper Mill 48, No. 9, 2, 8 (Mar. 3, 1923).

Juul, Wm.
The pulp and paper industry of Finland.
Paper Ind. 5, No. 2, 325-326 (May, 1923).

Kirjassoff, M. D.
Japan's paper industry.
Commerce Reports, Mar. 12, 1923, 688-89.

McKee, George M.
Pulp and paper industry in the past year.
Pulp Paper Mag. Can. 21, No. 2, 29-30 (Jan. 11, 1923).

Review of paper and pulp trades, 1922.
Paper Maker 65, No. 1, 29-31 (Jan. 1, 1923).

(To be concluded)

COLLOID STUDIES IN ROSIN SIZING*

By Dr. R. Lorenz.

IV. Surface Tension and Internal Friction

A. Surface Tension

Measurement of surface tension often gives insight into the internal changes of condition of disperse systems. The simplest apparatus for determination of surface tension is the dropping bottle (stalagmometer). In simplest form it consists of a pipette with a capillary attachment below, the end of which is polished smooth. If a liquid is allowed to run out of such a tube, it will run out in a steady unbroken stream if it has no surface tension. But the appearance of surface tension at the opening acts so that this does not happen; the liquid first gathers itself into a drop which increases until its weight is greater than the surface tensions will carry. It is clear that the more drops are formed from the same volume of liquid, the weaker the holding force of surface tension. In order to be independent of differences in apparatus, the measurement of the water value of the stalagmometer is used. Thus the drop count (d) of the solution under investigation is compared with the drop count (d_o) of an equal volume of the solution medium and the number, relative surface tension ($\frac{d}{d_o}$) is obtained.

12. The Concentration Curve of Surface Tension in Freshly Prepared Sodium Abietate Solution

As described above, a freshly prepared 1 per cent or concentrated sodium abietate solution appears totally clear,—even in a Tyndall cone,—that is, by passing a beam of light through it from an arc light. No residue remains on the ultra filter, on the other hand, if diluted further a bluish opalescence first appears, then a milky turbulency. If rapidly diluted, a coarse flaky precipitate comes out, which, however, for the large part, disappears with strong shaking. From the scheme of reaction below these processes are clearly the result of hydrolysis.

$$NdC_{20}H_{29}O_2 + HOH \rightleftharpoons C_{20}H_{30}O_2 + NaOH$$

sodium abietate — Abietic acid containing colloidal H_2O — Molecularly dispersed rosin sodium soap solution — Colloidal phase

Coarse flakes are again divided by OH-ion, which acts as a peptizer.

Now, this hydrolysis results, technically, when the viscous clear size after cooking is diluted and again by the dilution of the size milk in the beater water. Therefore, it is of practical interest, to study the internal changes in condition of the system during the course of this hydrolysis, that is, to study the condensation of rosin acid stalagmometrically.

By weighing out 5 g. $NaC_{20}H_{29}O_2$ and dissolving in 100 cc, a 5 per cent solution was prepared, and tested with a stalagmometer which had a water number of 129 drops. Then it was diluted to 4 per cent and the drops counted from the same volume, and so on down to 1/64 per cent as shown in Table I. At this concentration the water number was approximately reached. It may be said, in passing, that, by the opalescence, about 1/2000 per cent sodium abietate or colloidal abietic acid may be recognized.

In order to eliminate the effect of aging the whole curve was made up in one day. A freshly diluted, strongly shaken solution was tested.

For control, the same measurements were obtained on another solution with another stalagmometer (water number 139). The solution was prepared by weighing out the abietic acid and titrating in the equivalent amount of n/2 NaOH. As a comparison of columns 2 and 4 in Table I shows, the values $\frac{d}{d_o}$ agree in both concentration rows, especially the values of the very dilute solutions. The accuracy of the method increases considerably with the dilution, as shown at diminishing concentration intervals by the great differences in the drop count with increasing dilution.

The agreement of values in columns 2 and 4 shows the independence of the relative surface tension from the preparation as well as from the stalagmometer.

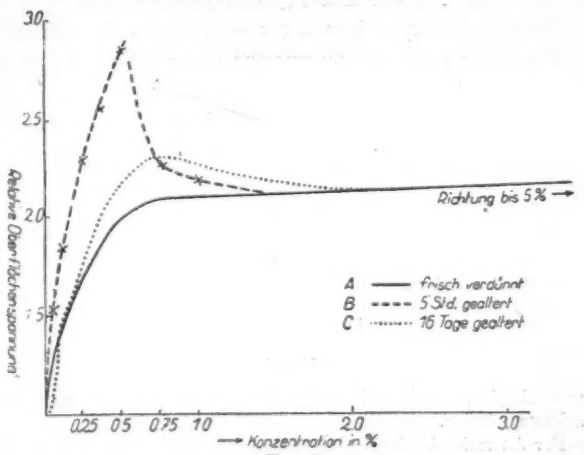


Fig. 2

The decrease in surface tension in per cent is read from column 2 or 4 if one substracts 1 from each given value for $\frac{d}{d_o}$ and multiplies the difference by 100; $\frac{(d-d_o)}{d_o} \times 100 = (\frac{d}{d_o} - 1) \times 100$.

Table I

	1. Solution prepared with crystals $NaC_{20}H_{29}O_2$		2. Solution prepared with crystalline $C_{20}H_{30}O_2$ + N2NaOH		2. Solution aged 5 hours		2. Solution aged 16 days	
Column	1	2	3	4	5	6	7	8
Conc. in %	d	$\frac{d}{d_o}$	d	$\frac{d}{d_o}$	d	$\frac{d}{d_o}$	d	$\frac{d}{d_o}$
		$d_o = 129$		$d_o = 139$		$d_o = 139$		$d_o = 139$
5	285	2.20	307	2.21	306	2.21	306	2.21
4	283	2.19	304	2.18	304	2.18	304	2.18
3	278	2.16	300	2.16	300	2.16	300	2.16
2	276	2.13	296	2.13	296	2.13	299	2.15
1.5	275	2.13	294	2.12	295	2.13	304	2.19
1.0	273	2.11	293	2.11	297	2.14	316	2.28
¾	270	2.09	290	2.09	312	2.25	321	2.31
½	258	2.00	278	2.00	397	2.86	301	2.17
⅜	241	1.87	260	1.87	354	2.55	280	2.01
¼	219	1.69	235	1.69	319	2.29	243	1.75
⅛	188	1.46	203	1.46	255	1.89	201	1.45
1/16	166	1.28	178	1.28	212	1.53	147	1.06
1/32	151	1.17	163	1.17	153	1.10	143	1.03
1/64	136	1.06	147	1.06	142	1.02	140	1.008

Thus, for example, the relative decrease in surface tension of a 5 per cent sodium-rosin soap solution compared to water amounts to 120 per cent; that of a 1 per cent solution amounts to 111 per cent, that of a 0.25 per cent solution, on the other hand only 69 per cent, etc.

*Papier-Fabrikant 1923. Translated by Burton L. Kassing, Hammermill Fellow at University of Syracuse.

In Fig. 2 the value $\frac{d}{d_0}$ is laid off on the ordinate; the concentration is laid off on the abscissa. The extended curve proceeds from 5 per cent to 1 per cent, only slightly inclined, but then it falls, with the resulting condensation of the hydrolytically split off abietic acid, in a steep curve.

A comparison of this curve with that of Haugs (Fig. 1) for the hydrolysis of sodium abietate permits recognition of complete agreement; among other things, the two curves have their steep drop, in fairly equal curves from 1 per cent down. From this, it arises that by means of the drop count, a handy measure of the degree of dispersion is obtained.

13. Stalagmometric Quantitative Analysis

The part of the curve from 0.5 per cent down is again represented in Fig. 3, in larger units of measurement along the abscissa. It gives

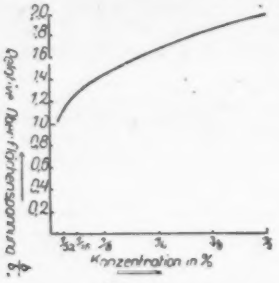


Fig. 3.

us a simple method to determine the concentration of any sodium abietate solution.

For determination 2 cc. of the solution is pipetted out and titrated with water until strong opalescence may be recognized—so that it is in the region of Curve 2. The solution is strongly shaken for a few minutes, to break up the coarse flocculations, and the drop count determined. By dividing the water number of the stalagmometer the relative surface tension $\frac{d}{d_0}$ is obtained. This value is then found on the ordinate. Proceeding from this point horizontally to the curve and from the intersection, perpendicularly to the abscissa, where the concentration can be read off. By calculating back from this diluted concentration to the 2 cc. of the original solution under analysis the concentration of the original can be obtained. It is recommended that after the stalogmometric determination to dilute still further with a measured amount of water and with this to carry out a control determination. An example of this is given below. The method was tested with solutions of known content, the values obtained agreed with the theoretical values within 1 per cent.

14. Phenomena of Aging in Diluted Sodium Abietate Solutions.

It was emphasized, that the surface tension measurements were taken immediately after dilution of the sodium abietate solution. The changes which had already taken place in a few hours are shown by comparison of columns 3 and 5 or 4 and 6 in Table I. The values in column 3 were determined in a forenoon. The same solution which had been corked up in an erlenmyer flask, in the afternoon, gave nearly double the values of column 5. The maximum of this aging phenomena falls, as is visible from the count value and the accompanying curve in Illustration 1, in the concentration region between 0.5 and 0.75 per cent, that is, just at that place where the mixture of rosin acid and its hydrous dispersion medium was recognized by means of the flocculation which occurs.[18]

That a critical stage of disentegration at a certain average particle size of the separating dispersoids can show abnormal increase in viscosity is known from the phenol-water mixture ([19]). In this mixture an abnormal decrease in the relative surface tension in the vicinity of separation is shown.

In columns 7 and 8 of Table I as well as in the corresponding (dotted line) curve in Illustration 1, the same stalagmometric values in the same concentration series after standing 16 days are found. All greatly diluted solutions had deposited considerable rosin acid, and, as a result, their surface tension is increased. This makes it clear, that the water value will not be reached at 1/64 per cent but practically at a little below 1/16 per cent. Also the maximum of the curve has been lowered considerably, probably, as a result of the beginning of flocculation; besides, there may be a disolvation of the disperse phase in process which may well take place with the coagulation.

It is worthy of notice that the tendency of the maximum is to the right. Apparently, the hydrolysis and its resulting reduction of the dispersion of the hydrolytically split off abietic acid, slowly moves toward the side of higher concentration, since the surface tension of the solution from 0.75 per cent to 1 per cent has, in contrast to the dilution, not decreased but increased.

Mere inspection convinces of this gradual, progressive reduction of the dispersity of the freed rosin acid in higher concentrations. The flocculation had increased after 16 days passing from the 0.75 per cent to the 1 per cent solutions. Indeed the 1.5 per cent solution showed a week opalescence in the Tydall come, while the 2, 3, and 4 per cent solutions appeared completely clear.

15. Ageing Phenomena in Concentrated Sodium-Abietate Solutions

After standing 14 days, the 5 per cent solution began to flocculate though here without any marked change of surface tension, as a comparison of the values obtained in column 4 and 8 of Table 8 shows.

To the contrary, after 14 days as reported at the end of the foregoing section, the 2, 3, and 4 per cent solutions were still clear. Of course, the flocculation, observed in the 5 per cent solution, could scarcely be traced back to hydrolytically freed rosin acid.

After eight days more the 4 per cent solution had flocculated and only the 2 and 3 per cent solutions still remained clear.

The 5 per cent solution precipitated out a stringy precipitate which, with warming of the flask, dissolved clear again. It appeared again after 13 days standing and after about a week had lost its solubility in boiling water as well as in the hot mother liquor. Incineration of a part of the water washed precipitate in a porcelain crucible showed conclusively that no abietic acid was present, separation of which from strongly alkaline solution was improbable.

A considerable ash residue remains, which dissolved in water gives an alkaline reaction (Na_2CO_3). A quantitative sodium determination appeared useless, since the stoichiometric value of the weight used had been veiled by its colloidal water content.

The results portrayed, forces the assumption that a reduction in the dispersity had occurred in the concentrated solution from the original molecularly dispersed sodium rosin soap to colloidal and finally to coarse aggregates which are no more soluble in H_2O but for another reason than dilute solution, where the split out rosin acid condenses. It is obvious to think of a polymerization, which, perhaps, occurs with participation of an excess of water. At least, stiff, curdy sodium rosin soap remaining with relatively small water content separates out of a boiled saturated solution when cooled, water soluble in the case of long storage. The process is probably analogous to the case of heat coagulation of albumin. A diluted albumin solution when coagulated yields a flocculant coarsely dispersed precipitate. A very concentrated solution (boiled egg) doubtless congeals to a higher dispersed jelly. Also this phenomenon corresponds, however, to the above mentioned von Weimarn rule.

[18] Derivation of the ageing curve from the theoretical data of the so-called Gibbs' Theorem, can only be referred to here.

[19] W. Ostwald: The World of Neglected Dimensions (Dresden, 1921). 76.

In order to determine approximately which part of the total dissolved rosin soap had given up the molecular dispersed condition, the 5 per cent solution was ultra filtered after a month's time. The abietate content of the ultra filtrate was then determined by the stalagmometer. From this the ultra filter retained 4.3 per cent of the total sodium abietate; in a 4 per cent solution after the same ageing period it was 2.4 per cent.

The ageing and hydrolytic phenomena in cool solutions, measurable by viscosity, in gelatinized rosin soap solutions, will be taken up below.

16. The Saturated Concentration of a Sodium Rosin Soap Solution.

When dialysed, sodium abietate behaves as a molecular dispersoid. Pure molecular dispersoids, customarily show sharply defined saturation—temperature curves, although certain influences, for instance, the degree of dispersion of the solid phase, can modify the saturation concentration of molecularly dissolved substances.

It was not attempted to derive the saturation curve for sodium abietate. The crystallized substance was dissolved until, in spite of continued heating on a water bath, an oily solid phase remained. The flask was placed over night in the refrigerator. The next morning 2 cc. of the supernatant liquor was pipetted out and the concentration determined stalagmometrically. With frequent stirring, of the solution, the flask was placed in water at 14 deg. cent. for 1 hour. The concentration determination was then carried out on the supernatant liquid. This was also carried out at 35, 50, and 70 deg. cent.

The flask was then allowed to cool slowly and with frequent stirring in a large beaker of water which served as a thermostat. Samples of the saturated solution were again analysed at the same temperatures as before.

Table II and Fig. 4 show that the same saturation curve is not obtained on cooling as is obtained when the solution is heated. The gelatinous deliquescent solid phase, above 69 deg. cent., a coagulation of oily drops, thus in the course of the investigation had different solubilities at the same temperature which have been considered not only as independent values of the temperature but also as functions of ageing and preliminary treatment as the temperature. In this, sodium rosin soap in water shows a property of a typical colloid system. The conclusions which were drawn above from its weak capacity to

Table II

°C.	Drop count d	Relative surface tension $\frac{d}{d_o}$; d = 139	Dilution 2 cc. diluted to: cc.	Concentration of dilution	Concentration of the saturated solution
		Heated			
0	226	1.63	10	0.215	1.10
	200	2.44	20	.114	1.15
14	313	1.53	20	.160	1.60
	188	1.35	40	.080	1.62
35	257	1.85	20	.358	3.58
	216	1.55	40	.173	3.46
50	192	1.38	150	.087	6.53
	182	1.29	200	.065	6.49
70	210	1.51	250	.145	18.1
	197	1.42	350	.107	18.7
		Cooled			
50	214	1.54	150	.166	12.4
	203	1.46	200	.125	12.5
35	214	1.54	100	.172	8.60
	190	1.37	200	.085	8.51
14	200	1.44	70	.129	4.50
	181	1.30	140	.063	4.40
0	199	1.43	50	.112	2.79
	175	1.26	100	.057	2.95

diffuse, that it, although still molecularly dispersed, stands near to a colloidal system, appears just as correct here, especially in saturated solution.

17. Surface Tension of Abietic Acid Sols and Size Milk.

To derive the surface tension curve for abietic acid hydrosols seemed at first of little promise on account of its small capacity to increase the concentration (maximum about 0.6 per cent. See above). The measured values in the case of a single sol varied between $\frac{d}{d_o} = 1.05$ to 1.31, but without conclusive regularity. The significance of concentration within the small range accessible was overcome by other influences (size of particle, hydration, and other functions of preliminary treatment, ageing, etc.). The order of magnitude of the drop in surface tension of a sol is of the same value as in the case of a correspondingly dilute sodium abietate solution.

The determination of the surface tension curve for size milk of varying alkali content rewarded us that much more since it was

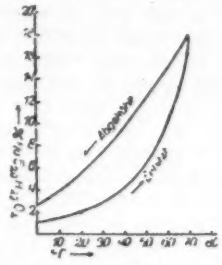


Fig. 4

hoped that by comparison of these surves with the previously described sodium abietate concentration curves, to obtain a direct measure of the NaOH content of the milk.

Analytically definite size milk solution was tested by the stalagmometer at increasing dilution. The combined rosin content of each initial solution of comparative dilution series was the same, only the alkali content was gradually increased until with clearing of the milk, the equivalent between rosin acid and NaOH was reached.

A size milk was next taken for investigation; 20 cc. were dissolved in alcohol until it needed 0.98 cc. or approximately 1 cc. n/2 NaOH to give a pink color with phenolphthalein. Accordingly the following initial solutions for comparable dilution series were prepared.

Cc.	I	II	III	IV
Size milk	15.00	15.00	15.00	15.00
Water	1.00	0.75	0.50	0.25
$\frac{n}{2}$ NaOH	....	0.25	0.50	0.75

From solution I to II the milky appearance diminished consider-

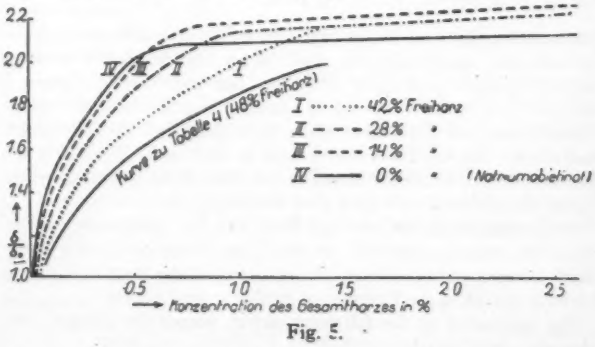


Fig. 5.

ably, solution III only still showed opalescence, solution IV was completely clear (neutral 2.5 per cent sodium abietate: the total rosin was determined as 2.36 per cent corresponding to a concentration of 2.53 or approximately 2.5 per cent sodium abietate). A comparison of column 8 in Table III with columns 2 or 4 in Table I shows the general agreement between the corresponding values of clear solution IV with those for pure sodium abietate. The attending curve in Fig. 5 is again shown as in Fig. 2.

From the calculated mixing proportion and the indicated titration

value, the free rosin content of the solutions was indicated. Referred to the total rosin, they are as follows:

	I.	II.	III.	IV.
Free rosin in per cent of total rosin ..	42.4	28.2	14.1	0

The figures for relative surface tension for these solutions have been placed in Table III. In Table IV the count value of a size milk at 48 per cent free rosin, which, however, could be prepared only in weak total rosin concentration.

From the two tables and the attendant curves in Fig. 5, it is seen that in the region where the branch of the curves falls, where the method yields especially well-defined values, accordingly in the region of lower concentration, the relative surface tension drops with increasing alkali content in a decreasing progression.

The curve of the size milk with the least alkali is the lowest. Reduction of the free rosin about 6 per cent (I) raises the drop in surface tension curve considerably. At about the same distance over I lies the curve of solution II, although the decrease in free

TABLE III

Solution	I 42.4% Free rosin		II 28.2% Free rosin		III 14.1% Free rosin		IV 0% Free rosin $NaC_{20}H_{29}O_2$	
Column	1	2	3	4	5	6	7	8
Conc. in %	d	$\frac{d}{d_o}$ $d_o = 139$	d	$\frac{d}{d_o}$ $d_o = 139$	d	$\frac{d}{d_o}$ $d_o = 139$	d	$\frac{d}{d_o}$ $d_o = 139$
2.5	308	2.21	311	2.24	309	2.23	300	2.16
2.0	307	2.21	308	2.22	310	2.24	299	2.15
1.5	306	2.20	305	2.20	313	2.25	296	2.13
1.4	306	2.20	...	....	...	....	...	....
1.2	294	2.12	....	....	....	....	....	....
1.0	281	2.02	288	2.14	309	2.23	294	2.12
0.75	263	1.89	286	2.06	300	2.16	290	2.09
0.70	...	....	...	....	298	2.15	...	....
0.60	....	....	...	....	290	2.08	286	2.06
0.50	234	1.69	260	1.87	276	1.99	280	2.02
1/3	226	1.63	245	1.76	258	1.86	263	1.89
1/4	197	1.42	222	1.60	234	1.68	238	1.71
1/8	182	1.31	192	1.38	200	1.44	208	1.50
1/16	141	1.03	163	1.17	167	1.20	189	1.36
1/32	....	....	...	....	...	....	167	1.20
1/64	....	....	...	....	...	....	149	1.07

TABLE IV

Free rosin content—48% of total rosin

Column	1	2	3	
Conc. in %	d	$\frac{d}{d_o}$ $d_o = 139$	$\left(\frac{d}{d_o}\right)^4$	Note
1.30	217	1.98	155	The 1.3% solution was so diluted that the single measurements had the same difference relative to the concentration. Therefore, the unusual selection of concentrations.
1.08	265	1.91	133	
0.87	251	1.80	106.1	
0.65	234	1.68	80.1	
0.434	213	1.53	55.2	
0.217	184	1.32	30.6	

rosin content is about 14 per cent amounting to double the fullness. Solution III, which again has about 14 per cent less free rosin than II, has its curve over II at only about half the distance between I and II. The distance between III and IV is still less. At concentrations less than 5 per cent where hydrolysis has fully developed, the surface tension of a solution weak in free rosin falls nearly together with that of a neutral solium abietate solution, the two curves essentially differing only at higher concentrations.

In general it can be said that the richer the solution is in free rosin, the more gradual will be the curve of surface tension drop. With increasing alkali content, the beginning of the steep drop of the curve is moved in the direction of weaker concentration.

The calculation of the following section shaped the relation considerably more clearly.

18. Approximate Formulations of the Function Between Surface Tension and Concentration.

In order to find a simple expression for the regularity of change in surface tension with dilution of a rosin size solution of varying alkali content, the curve for a series of mathematical functions of the value $\frac{d}{d_o}$ was drawn.

First the values for neutral sodium abietate were calculated. Recording the curve of the reciprocate and different logarithms in a coordinate system, the swinging course of the original curve was not greatly simplified. Then, when the numerical value of the power $\left(\frac{d}{d_o}\right)^n$ was determined, the form in Fig. 6 for low concentrations was given. Here the curve of the third power was convex to the y axis, the curve of the 5th power convex to the x axis. But the curve of the 4th power is a straight line.

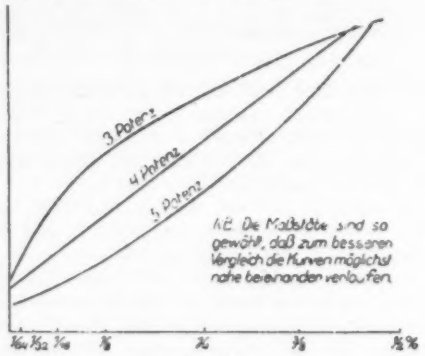


Fig. 6

It should not be asserted that these empirical proportions between relative surface tension and the 4th root of the concentration of the sodium abietate solution are strictly realized. The measurable surface tension, acting from without, as a result of a great number of complicatedly combined single forces, does not obey absolutely such a conjectural, simple mathematical dependence of concentration. But as Fig. 7 shows, our method is still sharp enough to differentiate between whole powers but not between broken powers. One can content himself with the 4th power as a first approximation for description of the process. The approximation is, however, very good. Even when drawn up on large coordinate paper, the described regularity is still significantly maintained.

That the question is not only as to a mathematical coincident but, actually, the 4th power or one of its close partial powers is fixed, even if still unknown physical reasons must be at the basis, is here to be accepted since not only sodium abietate but also

TABLE V

Conc. in %	I Free 42.4%	II Free 28.2%	III Free 14.1%	IV 0% free $NaC_{20}H_{29}O_2$ calculated from Table I, Column 1
2.5	240	251	247	....
2.0	240	243	251	206
1.5	235	234	258	206
1.4	235	....	...	...
1.2	203	....	...	....
1.0	166	210	247	200
0.75	128	180	217	193
0.70	...	...	215	....
0.60	....	....	188	181
0.50	81.7	123	157	159
1/3	70.8	96.0	119	119
1/4	40.7	65.8	80.1	81.8
1/8	29.5	36.2	43.0	44.9
1/16	11.3	18.6	20.8	27.0
1/33	....	....	....	19.0
1/64	....	....	....	12.5

solutions with any free rosin content reveal this regularity. In Fig. 7 are the curves of Fig. 5 raised to the 4th power (See Table V).

As is seen, the proportions reach the farther into the region of higher concentration the richer the solution is in free rosin. In the case of solution IV (neutral sodium abietate) it reaches to only a little over 0.5 per cent, about where the solution opalesces. With solution III it reaches to about 0.7 per cent, with II to fully 0.75 per cent and with I to 1.4 per cent. The curve of the 48 per cent free rosin solution is, in the 4th power, a straight line in its whole

course or at least as far as it can be followed on account of its limited properties of increasing its concentration.

19. Stalagmometric Free Rosin Determinations.

The *proportionation* of the 4th root of the concentration of diluted rosin size solution with the relative surface tension holds true collectively, not only with measured sodium abietate solutions and size milk solutions prepared from pure abietiic acid, but also with sodium rosin soap solutions and size milks prepared from ordinary colophony.

If one unites a ratio of the abscissa to the ordinate (Fig. 7) the straight line from the 4th power is fixed in its direction for each free rosin content, having but one meaning in the coordinate system.

It suffices, then, with a size milk of unknown alkali—that is, free rosin content, to measure stalagmometrically, a 2 to 3 dilution, raise the value $\frac{d}{d_0}$ to the 4th power, draw a straight line through the point obtained and measure the angle with the x or y axis. Through comparison with Fig. 6, the free rosin content may be approximately determined, the richer in free rosin the milk is the more accurate the determination.

The "drop count" is a reliable method for management control of size milk preparation. Assuming that one endeavored to dilute the size regularly to 2 per cent (20 g. per 1) 10 cc. of the milk to be tested is pipetted out, diluted to 100 cc. and the drops counted which are formed by a definite volume of this solution when it flows out of a capillary tube. For example, 143 drops are counted, if the size milk was actually 2 per cent. Now, if another solution forms more drops (with the same manipulation) the size milk must be still more diluted, but if fewer drops are formed the size milk is already too much diluted.

Naturally, one must always use the same stalagmometer in order to obtain comparable values. A simple one may be prepared from a 10 cc. pipette with a sufficiently fine, smoothly polished capillary attached by rubber tubing so that glass touches glass. Above and below the swelling, marks are placed at any place and the drops are counted which are formed from the volume between the two marks.

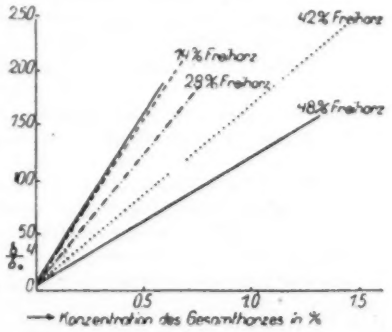


Fig. 7

It is recommended, of course, in the case of installation of this control which in accuracy far surpasses the other methods, to purchase a complete stalagmometer with fused-on capillary which may be ordered through the firm of R. Goetze, Leipzig, Nurnberger Strasse.

B. Internal Friction

20. The Viscosity of a Pure Rosin Size Solution.

The internal friction of size solution at various temperatures and concentrations was measured by means of Wilh. Ostwald's viscosimeter. By taking the temperature curve for pure water (n_0) the viscosimeter was next standardized and the measurements on rosin solutions (n) were referred to this curve (n/n_0). The viscosity of a 0.25 per cent sodium abietate solution, Table VI, column 2, (practically quantitatively broken up by hydrolysis), was not much greater than that of pure water (Column 1), at room temperature, not quite 1 per cent, with heating, even less. The accompanying curve falls almost in the same position with that of the friction curve of pure water Fig. 8 and on that account is left out.

Also the viscosity of a 0.75 per cent sodium abietate solution still showed us considerable effect; at room temperature it is about 4 per cent higher than the pure water (Column 3, dash line curve in Fig. 8).

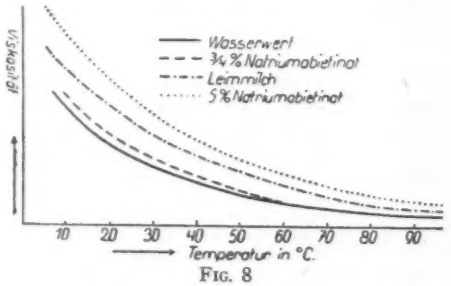


Fig. 8

A concentrated (5 per cent) sodium abietate solution, to the contrary (Column 4; dotted curve) had at 15.0 deg. cent. a viscosity about 37.3 per cent higher than water and even at the boiling heat still took 11 to 12 per cent longer time of discharge.

b. Abietic acid hydrosol (column 5) similar to greatly diluted rosin soap solution (column 2) showed no viscometric effect and was left out of the chart.

c. Size milk (column 6, dot-dash curve) behaved about like a sodium abietate solution of the same concentration.

The facts of columns 2, 5, and 6 bring out that colloidal rosin acid influenced the viscosity of the solution strikingly little. This conduct is a criterion of typical suspensoid colloids. It contributes to our conclusion drawn above, that size milk is no emulsion in the usual sense of the word. Further evidence will be given below.

As the really considerable raise of viscosity by sodium abietate is to be explained it will be discussed on a broader basis in the next section.

Table VI (Viscosity)

Temp. °C.	Time for discharge H_2O value of viscosimeter	Temp. °C.	Discharge in sec. 0.25 % $NaC_{20}H_{29}O_2$	Temp. °C.	Discharge in sec. 0.75 % $NaC_{20}H_{29}O_2$	Temp. °C.	Discharge in sec. 0.5% $NaC_{20}H_{29}O_2$	Temp. °C.	Discharge Abietic acid hydrosol 2%	Temp. °C.	Discharge time of size milk 3.5% total 31.1% free
16.2	88.4	16.4	89.6	15.1	94.0	15.1	123.4	13.2	96.0	11.5	115.4
20.4	80.4	23.6	77.1	17.8	88.9	26.6	103.4	16.2	89.6	19.1	101.1
27.2	72.3	34.8	67.2	25.4	77.3	35.7	88.3	29.7	71.2	24.4	91.8
35.2	66.0	46.1	59.3	28.6	74.0	42.4	80.7	37.5	64.7	29.8	84.8
42.3	61.0	51.0	56.0	36.5	65.8	52.2	71.6	43.0	61.1	41.5	73.0
50.8	56.0	59.2	53.2	41.0	62.2	66.6	62.5	54.1	54.6	52.0	65.1
62.6	51.6	66.3	50.8	56.2	54.2	75.4	57.8	63.4	51.3	62.1	59.0
71.3	49.0	71.2	48.3	63.0	52.0	86.0	53.5	74.3	48.2	77.0	52.0
81.5	46.7	83.4	47.5	74.4	48.3	67.5	50.8	85.0	46.2	89.0	48.6
90.0	45.3	91.8	45.1	80.5	46.8	....	....	95.0	45.1	95.0	47.5
....	....	....	....	90.1	45.3	....	....	....	....	....	....

N. B. Made with two, occasionally three measurements which frequently agreed exactly. In the case of deviation of a fraction of a second, the average was used in the table.

21. Concentrated Sodium Abietate Solution as an Emulsoid.

At the close of Section 14 the idea was established that sodium rosin soap in concentrated and, if possible, hot saturated solution, is close to the colloidal condition. It is now of interest to know, whether the colloidally disperse phase of such a solution is suspensoid or emulsoid, that is, whether it is weakly or strongly subject to solvation. The viscosity-temperature and the viscosity-concentration curves are the criteria here. In the case of insoluble suspensoids there has been observed that with decreasing temperature or increasing concentration, a very weak, linear increase in viscosity. In the case of emulsoids, especially if they are strongly subject to solvation, or disintegrating colloids, there is a sudden, steep rise of the viscosity.

A saturated solution at 70 deg. cent. was investigated, which from the results of the stalagmometer contained 18 per cent $NaC_{20}H_{29}O_2$. On cooling it assumed gelatinous properties. The results of the tests are given in Table VII and Fig. 9. When cooled a curve was

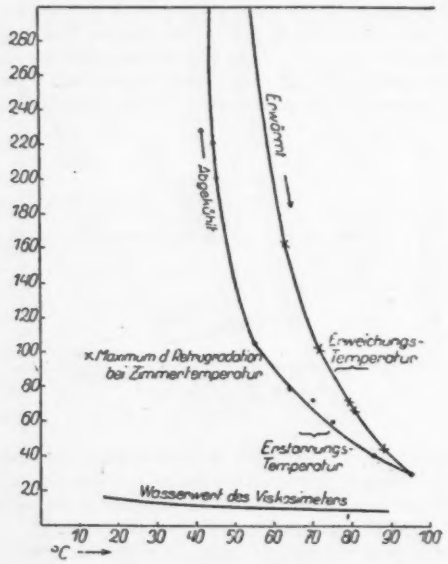


Fig. 9

obtained which is different from the one obtained when heating. But both curves agree in that they reveal a quite large change in viscosity within a few degrees cent. even above the coagulation and softening temperatures which have been shown in the illustration. One may compare therewith the curve for the water value in Fig. 9.

Concentrated rosin sodium soap solution behaves either on cooling or heating like a gelatinous, soluble emulsion, especially like softening gelatin.

The same steep rise as in the case of the viscosity temperature curve is observed in the case of inspection of the viscosity change with increasing concentration of rosin-sodium soap. From Fig. 8 a 5 per cent sodium abietate solution at 85 deg. cent. shows a relative viscosity n/n = 1.17. From Fig. 9 the corresponding value of relative viscosity amounts to 4.5 to 5.5 for the approximate 18 per cent solution considered here, thus considerably more.

Rosin sodium soap jelly when forced through the capillary of the viscosimeter many times showed a decrease in viscosity, similar to other systems subject to solvation, mechanical treatment succeeded in depressing the time for discharge at room temperature from 2290.0 to 98.7 seconds.

22. Summary.

1. A short technological monograph on colophony was given. Its suitability for paper sizing and the basis therefore was discussed.

2. The basic principles of dispersoid chemistry were explained as far as appeared necessary for understanding the colloidal chemical peculiarities of the rosin sizing problem.

3. L. Pauls conception that there is a whole series of modifications of abietic acid with different colloidal water content can be confirmed. However, his conclusions, that they may be treated as stoichiometric constant compounds (colloidal hydrates) was not verified.

Table VII

Water value of the viscosimeter		Measured with decreasing temperature		Measured with increasing temperature	
Temp. °C	Time of discharge in seconds	Temp. °C	Time of discharge in seconds	Temp. °C	Time of discharge in seconds
16.4	17.7	19.0	2,290.0	19.0	2,290.0
27.0	15.0	29.2	773.3	50.8	359.2
35.0	13.8	36.1	483.2	63.0	154.2
41.7	12.9	45.2	212.3	72.0	100.2
51.0	12.4	46.4	191.0	79.0	74.0
62.4	11.3	55.3	106.5	81.0	68.8
71.3	11.0	64.1	79.6	88.0	47.3
81.5	10.5	70.0	73.3	....	....
89.5	10.2	75.0	61.2	....	....
....	....	86.0	42.6	....	....
....	....	95.0	32.2	....	....

4. In the sweeping change of physical properties of dispersed rosin as a result of small increase in temperature, an explanation of poor sizing in hot running of the hollander was found.

5. It was observed that in cooling of an abietic acid-glacial acetic solution that the disintegration did not lead to a coarsely dispersed percipitate, but, for hours, a typical colloid disintegration phase remained.

6. P. Von Weinmarn's rule—that at extreme concentrations a precipitate in fine division was obtained, and that at average concentrations the precipitate was coarse—was confirmed with abietic acid. Also the crystalline colloid phase, generally accepted by P. Von Weimarn was occasionally recognized in the case of abietic acid hydrosol.

7. By preparation of a pure rosin size solution in the laboratory, an investigation was carried on concerning the peptizing action of alkali (OH = ions).

8. The dispersoid-chemical characteristics of chemically pure rosin size were investigated with the methods of colloid chemistry (filtration, ultrafiltration, diffusion, dialysis, ultra microscopy, electrophoresis, stalagmometry, and viscosimetry).

This showed that sodium rosin soap in water was close to the boundary between molecular dispersion and colloidal dispersion and that it assumed the emulsoid colloid condition only in very concentrated solution. "Free" rosin is shown to be a typical suspensoid colloid with a negative charge. Size milk is a free rosin hydrosol peptized by means of the abetate, that is, the OH = ions.

9. The surface tension-concentration curves of rosin size solution with varying alkali content were taken up, described and their use for analytical purposes was verified. By means of a single drop count a very exact process control for size milk preparation may be practiced. With more "drop counts" and corresponding calculations, the total and free rosin content of a size milk may be determined.

10. The ageing phenomena in sodium rosin soap solution were studied with the stalagmometer.

11. In the attempt to get the regularity of surface tension of size solutions of various alkali content into a simple mathematical form, a generally fulfilled proportion between the 4th root of the concentration and the relative surface tension was shown.

12. The internal friction of the size solution was measured at various temperatures and concentrations and employed for conclusions concerning the physical properties of the disperse phase.

(*To be continued*)

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BRANCH ACCOUNTING*

By CHARLES H. BROOK

For the purpose of this discussion branch accounting is divided into four principal groups which will comprise the more important business organizations. These groups are as follows:

1—Holding companies having subsidiary companies in various localities.

2—Manufacturing companies having branch manufacturing establishments.

3—Manufacturing companies having branches for distribution of product.

4—Retail chain stores.

There are probably numerous other cases of concerns having branches such as, for example, professional accountants, banks, etc.

It is my intention to discuss the relative merits of centralization or decentralization of the principal accounting functions as applied to organizations such as are referred to above.

By centralization is meant the keeping of the principal books of account and the preparation of balance-sheets, profits-and-loss accounts and cost records at a central, or head office.

Decentralization means the converse, that is to say, keeping principal books of account, preparation of statements, etc., at the different factories or branches of the organization. In deciding which is the best course to adopt, a great deal depends on the type of organization, and the distance of the subsidiary plants from the main office.

I will now deal more specifically with cases falling under:

1. Holding Companies Having Subsidiary Companies in Various Localities

This caption embraces those cases where a holding company controls through stock ownership, a number of subsidiary corporations, having manufacturing plants in various localities, and also includes cases where an individual likewise owns the capital stock or has a controlling interest in subsidiary companies, likewise having plants located in various places. In cases of this kind it is recommended that the management, general accounting, cost accounting, purchasing treasury, secretarial and statistical functions be centralized in a general office, situated in one of the large financial or industrial centers where probably the different plants can be reached by mail within one or two days.

The functions of general and cost accounting will be placed in charge of a comptroller, who will be located at the head office, and under whose supervision the books and records will be kept. As far as the plants are concerned the accounting organization will consist of a works accountant in charge of each separate plant unit who will reside in the neighborhood of the plant, and who will be responsible to the comptroller for the preparation of payrolls and stores records, and the distribution of all payrolls and stores disbursements to proper accounts through a system of classified accounts.

In this connection I will take as a simple example a holding company having a main office in Cleveland and controlling the stock ownership of a number of iron-ore mining companies in the northern peninsula of Michigan, and perhaps some blast furnaces and steel plants in the Mahoning Valley, or in Pennsylvania. A works accountant will be appointed at each mine and plant who will be responsible for the payment of wages and custody of stores, and whose duties will comprise the proper distribution of payroll and stores charges through a system of classified accounts. It will be necessary for him to render reports at the end of each month giving the total payroll distributed over the series of accounting classifications, and likewise another report for the stores disbursements. These reports will be mailed to the comptroller at the head office within a day or so after the turn of each month. These reports when received at the head office will form the basis for the preparation of the monthly mine-cost sheets and likewise the cost sheets for the blast furnaces and steel plants, all of which can be handled by the cost-accounting unit located at the head office. These reports will also form the basis for entries on the general books, which will be kept at the head office for each separate company.

Purchases of materials and supplies for the various mines and plants will be conducted by the general purchasing agent for all the companies who will be located at the head office. The materials purchased will, however, be delivered to the respective plants and each works accountant will render daily reports to the comptroller's office of materials received.

Two copies of invoices will be requested when purchasing supplies, one of which will go to the plant and the other to the comptroller's office. The works accountant at the plant will use his copy of invoices for the purpose of his stores records and the comptroller will use the original copies of the invoices for general accounting records, and for payment of the bills when they become due.

Invoices will be checked at the head office for receipt of material from the reports received from the works accountant and will also be checked against purchase orders for prices and other details. The works accountant will send each day a list of invoices which he has taken into his stores records, which will be checked in the

*A paper presented at a regional meeting of the American Inst. of Accountants, Akron, Ohio, November 3, 1923.
*From *Journal of Accountancy.*

comptroller's office so that the stores record at each plant may be kept in proper control with the general books. At frequent intervals the works accountants will submit the aggregate totals of their stores balances and the head office will see that they agree with the stores controlling account.

This plan contemplates that stores records be kept in both quantities and dollars and that the average price is used in disbursing stores. All disbursements from stores will be made on requisitions which will be priced and extended daily. At the end of each day a recapitulation will be made of the stores disbursements, according to the account numbers to be charged and the daily figures will be entered upon a sheet, having a column for each day in the month. If the previous day's stores disbursements by account numbers be added to the next day, cumulative figures will be entered in each day's column during the month so that on the last day of the month the stores disbursement sheets will be complete and will not have to be cross-footed. This will save a considerable amount of time at the end of the month and will admit of the report being mailed to the head office immediately after the close of the month's business.

The payroll will be made up according to local custom either on the 15th day and last day of each month, or weekly. The basis for the payroll will be the time tickets issued to employees and the amounts due to each employee may be entered on the payroll each day. As in the case of stores the payroll items can be accumulated daily, so that at the end of the pay period the amounts due each employee will have been accumulated and thus the work of adding the amounts due obviated. The distribution of the payroll to the various expense accounts should also be made up daily, and cumulative figures entered in each day's column on the distribution sheet during the month so that on the last day of the month, the payroll distribution sheet will show the complete distribution in the last column without any further cross-footing. The works accountant will have to see that the payroll distribution checks each day with the payroll itself. The payroll will be paid locally at each plant, and after it is paid the sheets may be forwarded to the head office for audit. If payment is made by check as is usual in the majority of industrial plants, the head office will check the payroll against the cancelled checks. The distribution of the payroll will be forwarded to the head office immediately after the close of the month's business and will be used for the purpose of completing cost data and entries on the general books.

Small local purchases and other expenses can be provided for out of an imprest fund, which will be in charge of the works accountant at each plant. A report will be made either monthly or at more frequent intervals to the head office of petty cash expenditures, accompanied by vouchers, and this report will be used as a basis for entry on the general books in respect to such expenditures.

The accounting work at the head office, if the concern is large, will probably be divided into departments such as general accounting, cost accounting, sales ledger accounting, accounts payable division.

The general accounting department upon receipt of the stores and payroll distribution and petty cash reports will proceed to make the necessary journal entries upon the general books, dealing, however, with all items in totals rather than in detail. All reports which emanate from the plants will be turned over to the cost department and from such reports cost data may be readily assembled. The cost department will work in harmony with the general accounting department to the end that all cost data will be checked out against totals of controlling accounts on the general books.

The sales accounting department will handle all customers' accounts and will also handle billing and will make monthly reports to general accounting department of sales, including returns and credit memoranda. If the products sold are numerous the sales accounting department will supply an analysis of sales.

The comptroller of the holding company should be made comptroller of each separate company. All similar functions, for example the functions of handling cash, cost accounting, general ledger account can be handled by the same persons for each company, thus centralizing the functions of a group of companies into departments specializing on various duties. Under this form of organization it becomes possible, to prepare each month, balance-sheets and profit-and-loss statements, and also cost and statistical records within a period of about ten days after the end of each month, and consolidated statements can easily be prepared by putting all the different statements together in the usual way.

If we were to consider decentralizing the accounting in an organization of this kind, we would find that we would simply multiply the functions by the number of companies controlled. Consequently it would be considerably more expensive. Centralization in this case is considered to be the most economical and efficient form of management.

2. Manufacturing Companies Having Branch Manufacturing Establishments

Cases of this kind, where a manufacturing concern finds it necessary to open up other manufacturing plants in different parts of the country, are quite numerous and become necessary for many reasons, some of which are the proximity to supplies of raw material, labor, water supply, etc. In many cases it will be found that each individual plant will be distributing its own product, and consequently will have its own unit of sales force, purchasing force, and naturally the accounting functions will follow and will be logically kept at each separate plant.

In cases of this kind when the individual units of plants are quite large and are separated by long distances such as, for example, a plant in the eastern states and a plant in California, it undoubtedly will be far more advantageous to decentralize the accounting and have the books of each concern kept at the separate plants. There will, however, be a form of centralized control, not only from a management standpoint, but from an accounting standpoint. There probably will be a comptroller who will exercise supervision, not only over the accounts of the main corporation, but also over the accounts of the subsidiary corporations. Balance-sheets, profit-and-loss statements and other accounting data having been prepared at the separate plant units, will be cleared into the comptroller at the main office who will prepare the consolidated statements.

3. Manufacturing Companies Having Branches for Distribution of Product

This classification embraces concerns which have a centralized plant for the production of their product and maintain branch establishments for the distribution of their product.

In cases of this kind the general accounting, such as the preparation of balance-sheets, profit-and-loss statements, all cost accounting and statistical data will be located at the head office of the company, but the accounting with customers, or what may be termed for convenience, sales accounting, may be decentralized into the branches with the object in view of bringing the customers' accounts closer to the location of the customers. This is naturally quite essential from the standpoint of billing and rendering statements to customers, and the final collection of accounts. Apart from this phase of the accounting, however, the remaining functions of accounting can be handled and controlled by means of a system of reports from each branch office to the main office, such reports consisting of monthly totals of sales, expressed both in money values and units. These reports can be mailed to the main office immediately at the completion of each month's business, and when received by the main office they can be consolidated into one report, from which the sales and cost of sales can be readily obtained. Small incidental expenditures can be made through the medium of imprest funds at each branch, reports of which will be made to the head office at monthly intervals, or more frequently.

REPORT OF THE COMMITTEE ON INDUSTRIAL RELATIONS

By M. L. Twomley, Chairman Industrial Relations Committee, National Paper Box Manufacturers' Association.

I regret indeed that this subject of industrial relations, upon which it is the duty of your committee to report, is one which has always seemed dry and uninteresting. That it deserves our careful consideration is made evident by the fact that our officers have found it wise to include it as a part of our convention program.

I think as a fitting approach to our consideration of this subject we may well ask ourselves the following questions: "If we were to send a disinterested party into our plants who should ask our employees if they considered they were getting a square deal from us, what do we think would be their answer? Do we consider that we are getting a square deal from our employees?"

Your committee consider that industrial relations today is indeed a most important subject upon which we are by no means well informed and I want to assure you, although you would discover it anyhow, that what we shall present is very largely not out of our minds, but largely from minds of others who during recent years have given it careful study. I have gathered information from such sources as Cyrus McCormick, Sr., of the International Harvester Company; Mr. Litchfield of the Goodyear Tire and Rubber Company; Charles N. Piez, of the Link Belt Company of Chicago; Swift & Co., Chicago; Arthur Young, manager of industrial relations, International Harvester Company; Frank Jewel Raymond, of the Inter-racial Council, New York City, and friends of mine with whom I have had some opportunity to discuss this question.

Not Sufficient Interest

In a letter which I addressed to Chairman Kalleen several weeks ago in regard to a report of the Industrial Relations Committee at this time, I expressed the opinion that our membership has no more than a very mild interest in the subject of industrial relations.

I frankly admit that I am still of that opinion and I include myself among those who should have a very much greater interest in this subject. It is, however, one of the subjects which appear on our program as one which ought to receive our attention and to which our consideration is invited. At our meeting of last May your committee were not well prepared to report upon this subject and in speaking for them, I can not say that we are better prepared at this time.

Industrial relations, so far as we have determined, is a relationship which seeks to increase production and has this for its primary object. Other interests for which it stands may be considered incidental to this primary one of increased production. It represents, in fact it bespeaks, a phase of management in which we deal exclusively with men and not with things. It has reached its place of tremendous importance with the large industries of our country, because (without referring to the early history of industry) during the past fifty years it has been true that management and men have been engaged in the game of out-maneuvering each other until the time has now come when, generally speaking, both management and men are laboring under a burden of mutual suspicion and are now trying to overcome the resistance piled up against them out of the double dealing of past generations.

It was Aritotle who said that the only reward a liar had was that nobody believed him when he told the truth. Perhaps it is in just such a way that so-called industrial relations are troubled. Perhaps even now when we tell the truth, when we try to do the square thing, we find it difficult to persuade people that we, men and management alike, are trying to tell the truth.

It has not been many months since perhaps the leading statistician of our country, in analyzing the question: "What is wrong with the world?" was reported in the papers to have said, and mind you he is not an evangelist, he is a statistician dealing with cold figures, with large facts, with curves plotted up and down: "The trouble with the world is that there is not enough religion in it." Many business men have since asked just what he meant and may we not consistently ask these further questions: Did he not mean that in dealing with men management must get down to real basic principles of integrity? Did he not mean that we must seek an honest course and pursue it? Did he not mean that in dealing with men we must make necessary allowances for all sorts of conditions and kinds of circumstances that surround the work we are trying to do? Did he not mean that we must abandon every motive, every rule of action save one? Did he not mean that we must at least set aside the gross materialisms of our days and make room for a purer faith in men and in higher values?

I think that we may say that a successful business must have an organization built up to serve the public which by giving a fair reward to those engaged in it, may increase its productivity to a point where the public, the management and the men may be rewarded to a greater extent than before. This has been done in many instances by simply training one portion of the man, namely, his hands, to become highly skilled and there is, therefore, suggested to us the question of what might be possible if all of the activity of the men in these instances was trained and applied to the industry in which they engaged.

Factors That Control Men's Actions

Man's actions are largely controlled by three factors. First, he is influenced by his education, both physical and mental. Often times misdirected energy is due to a lack of understanding; therefore, he should be encouraged to devote a portion of his spare time to education and an understanding of the industry in which he works. Second, he is influenced by his environment. If he is surrounded all day by men who are engaged in a monotonous grind, in a dissatisfied state of mind, he will soon acquire that state of mind himself. His environment should be such as to produce mental contentment. He should be encouraged to take physical exercise and engage in competitive sport so that his work might be improved both in quantity and quality and with less fatigue. Third, he is influenced by his heredity. Fortunately for us, a majority of our workmen are of American parentage or if not, are at least in sympathy with American government and American institutions, and it is largely the newcomers from foreign lands to our industries who have an inherited feeling of hostility toward our industries and institutions. I think that in looking toward the future safety of industry we must recognize that the hostile spirit and unrest which here and there is shown by our workmen today, will be reflected through their sons and others whom they may influence who will take their positions in industry in the future and this points us to the need of changing our industrial system to one of contentment and community interest rather than class antagonisms as soon as possible.

Labor and Capital Must Work Together

Labor and capital must work together in harmony if their service is properly rendered to the consumer and the public. We have perhaps become so accustomed both to hearing and reading this statement that we fail to realize the truth and the force it contains. It is my belief that the time will come when labor and capital

will work together in harmony and that it must come through the leadership of management, otherwise labor will get it done and perhaps through political power such as that which is being employed in England today, and this may come through one way or the other during the time of those who are gathered here. The success of both labor and capital, and in reality this means our country, depends upon this thing. Labor and capital themselves are the ultimate consumers and any action on their part which raises costs without increasing production will accomplish nothing except the raising of costs to themselves.

What I have said adds little, if anything, to the report which was submitted by your committee at our convention in Indianapolis last May. That report contained the very best thought I had upon the subject at the time. I could do no better. It was reviewed carefully by the other members of the committee, Messrs. Davis and Newton. We can do no better now, and hence I am taking the liberty of incorporating it into this report and presenting it again to you as follows:

Dissemination of Information

It is our belief that under an organization plan, a continuous study of industrial relations as applied to our industry similarly as the study of costs has been undertaken through the office of our National Association, which would contemplate frequent dissemination of information upon this subject, would yield to us helpful results fully as important as those which may be obtained from any other line of study.

We have recently passed through a period, namely that of 1920, in which the supply of labor was inadequate, followed by another in 1921, requiring the laying off of employees, a reduction in the hours for those who could be retained, and some reductions also in their wage rates. We now find ourselves again in a period when help is scarce and the conviction is growing in our minds that our labor problem of today is second to no other problem of our business.

Many of the largest manufacturers of our country, as we well know, have recognized during the past few years the importance of making a careful study of the industrial relations which should prevail between the employers and the employees and have provided departments of their organization in charge of industrial relations, these being placed under the direction of men especially trained for their work, and they have made much progress in this phase of management.

Employees Out of Touch with Help

In practically all plants of our industry there are not used a sufficiently large number of employees to justify the employment of men especially trained in developing the proper relations between those who have invested their money in our enterprise and those who invest their labor therein, and for that reason the point of contact is maintained either by the owners themselves or by their superintendents or foremen who endeavor to reflect the owners' attitude. In most plants the owners who are actively connected with their business become so absorbed with trade details that this contact is left to subordinates with the result that the employer is out of touch with the factory help; does not know the attitude of the employees toward the company, and conversely, the employees do not know the attitude of their employers and there is not that frank, open confidence between these two principals to the business which we recognize should prevail.

The absence of this direct, frank, honest contact between ourselves and our employees has a tendency to develop the suspicion in our minds that they want the highest they can get from us for as little service as they can render and care not whether the wage may be paid out of the sales value of the merchandise or whether in part it is actually paid out of the capital invested, and likewise does it develop in the minds of our employees the belief that we want the largest production we can get out of them for no more money than we are forced to pay, and a further result is that ultimately this suspicion in the minds of ourselves and our employees comes very close to the facts.

Wages for Producing Goods

The equivalent of one-third or more of the sales value of our merchandise is required as the wage for producing the goods and while much attention is given to the purchase of materials, machinery, etc., making sure the quality thereof is equal to the standards by which they should be measured, very little time is devoted to the efficiency of the labor we use and quite generally there are no carefully prepared standards by which to measure its value and yet the payroll is the most important item of cost which appears on our trial balance sheet.

Until within the last few years our industry, like many others, has attached great importance to the development of machinery and processes of production and, in the broadest sense, has not given the same attention to the development of man power. If the prevailing scarcity of labor continues, it is obvious that we must continue to improve upon our equipment and manufacturing processes, nevertheless your committee believes that the successful growth of our industry in the future will rely upon its ability to develop man power with which to meet the conditions of future opportunity.

Employees Should Have Voice

It is well for us to remember that we who invest our capital and our employees who invest their labor in our business have common desires and our employees, like ourselves, desire first, a voice, a chance for expression upon the matters which concern them as individuals in the industry; second, satisfactory employment of body and mind in favorable plant environment; third, indeterminate gain.

Your committee believes that, to a very large extent, our success in the future will depend upon the degree to which we develop personal relations with our employees, it being our opinion that this must be done so effectively that the time may come when we can sit down with them in frank, open discussion and ask plainly what they want, and they in turn can frankly tell us what they want, and we can tell them what we want, with no fear on our part that our employees are going to leave and no fear on their part that their employment is in danger, and perhaps we may then find that each of us want nothing but justice or a square deal.

Good Will of Employees

We believe that in the future we will find it not only a profitable adventure, but our plain duty to earn the good will and loyalty of our employees, to establish such personal relations as will replace the suspicions of each other with a spirit of co-operation so that the opportunity of company and employees alike are promoted and our employees, with us, will gain the sense of personal responsibility for service.

Our success of the future will be promoted as we work for these things.

Your committee holds no brief upon the subject of industrial relation. Conditions in our plants differ widely nevertheless we all depend alike upon the use of machinery, materials and men, and of these our efficiency in the use of men is the most seriously impaired.

Your committee submit the following as suggestions or recommendations to our members rather than a report, namely:

That our management institute study with reference to the responsibility of the employer—

First—In regard to his attitude toward his employees.

Second—In regard to the attitude of the employees toward himself.

Third—The safety and health of the employee.

Fourth—(And this covers the thought of the entire paper) The opportunity for co-operation.

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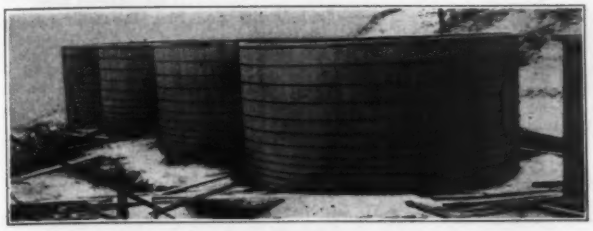

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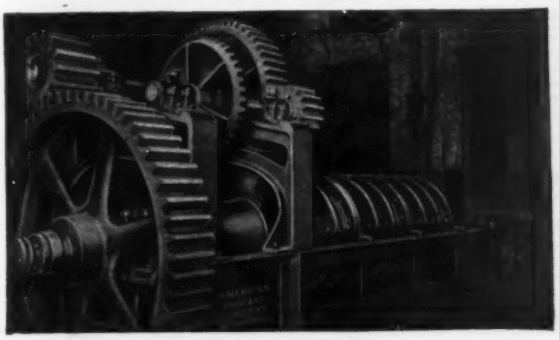

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Guaranty Trust Co., Gasconier, Antwerp, 778 bls. rags.
Castle & Overton, by same, 69 bls. rags.
W. Schael & Co., by same, 17 bls. flaxwaste.
Equitable Trust Co., by same, 183 bls. flaxwaste
F. Butterworth & Co., Inc., by same, 146 bls. bagging.
E. J. Keller Co., Inc., Dorelian, Antwerp, 50 bls. flaxwaste.
E. J. Keller Co., Inc., Middleham Castle, Marseilles, 191 bls. rags.
L. H. Abenheimer, Pres. Garfield, Kobe, 40 bls. rags.
D. M. Hicks, Waukegan, Dunkirk, 24 bls. threadwaste.
Katzenstein & Keene, Inc., Waukegan, Havre, 148 bls. rags.
Castle & Overton, Bay State, Dundee, 112 bls. jutewaste, 10 bls. threadwaste.
M. O'Meara Co., by same, 24 bls. paperstock.
Equitable Trust Co., by same, 9 bls., paperstock.
Baring Bros. & Co., by same, 67 bls. paperstock.
Goldman Sachs & Co., Pres. Roosevelt, Bremen, 272 bls. rags.
L. H. Abenheimer, by same, 237 bls. rags.
Chemical National Bank, by same, 209 bls. rags.
S. Birkenstein & Son, Mt. Clay, Hamburg, 113 bls. rags.
Castle & Overton, Rochambeau, Havre, 160 bls. bagging.
M. O'Meara Co., Volendam, Rotterdam, 41 bls. paperstock.
Whaling Waste Products Co., by same, 82 bls. rags.
E. J. Keller Co., Inc., by same, 494 bls. rags.
S. Birkenstein Sons, by same, 119 bls. baggings.
D. M. Hicks, by same, 88 bls. rags.
Hartig Pulp Co., by same, 74 bls. rags.
A. W. Fenton, Inc., by same, 159 bls. rags.
G. W. Millar & Co., Inc., by same, 255 bls. rags.

OLD ROPE

Brown Bros. & Co., Volendam, Rotterdam, 162 coils.
Brown Bros. & Co., Westphalia, Hamburg, 51 coils.
Brown Bros. & Co., Bristol City, Bristol, 143 coils.
Brown Bros. & Co., Marengo, Newcastle, 113 coils and 6 bales.
Brown Bros. & Co., Yorck, Bremen, 18 coils.
Castle & Overton, by same, 49 coils.
National City Bank, Schodack, Rotterdam, 53 coils.

CASEIN

Kalbfleisch Corp., Pan American, Buenos Aires, 2,083 bags.
Art Horn Co., Cleveland, Hamburg, 102 bags.
International Acceptance Bank, Tiradentes, Buenos Aires, 417 bags, 25,020 kilos.
West Virginia Pulp & Paper Co., by same, 417 bags, 25,020 kilos.
T. M. Duche & Sons, by same, 2,917 bags, 175,140 kilos.

WOOD FLOUR

B. L. Soberski, Drottningholm, Gothenburg, 847 bags.
The Hausa Co., Bremerton, Hango, 4,573 bags, 212,660 kilos.

WOOD PULP

Castle & Overton, Drottningholm, Gothenburg, 250 bls.
Scandinavian Pulp Agency, Inc., by same, 254 bls.
E. M. Sergeant Co., by same, 150 bls.
H. Hollesen, Inc., Yorck, Bremen, 6,157 bls.
Johanesson, Wales & Sparre, Inc., by same, 1,250 bls.
Perkins, Goodwin & Co., America, Bremen, 1,550 bls., 225 tons.
Buck Kiaer & Co., by same, 150 bls, 25 tons.
Castle & Overton, by same, 475 bls., 95 tons.
H. Hollesen, Inc., Pr. Roosevelt, Bremen, 345 bls,. 69 tons.

WOOD PULP BOARDS

Lagerloef Trading Co., Bremerton, Hango, 2,723 bls., 386 tons.
Lagerloef Trading Co., by same, 20 rolls, 4 tons.

BALTIMORE IMPORTS

WEEK ENDING JUNE 7, 1924

Parsons & Whittemore, E. Coast, 554 rolls, news print.

(Continued on page 60)

New York Office
280 Broadway

Dayton Office

Chicago Office
10 So. La Salle St.

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Test it
and you will
specify it

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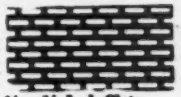

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W
WESTINGHOUSE ELECTRIC

Westinghouse

Imports and Exports of Paper and Paper Stock

(*Continued from page 58*)

Lagerloef Trading Co., by same, 4,579 bls., 914 tons wood pulp.
Castle & Overton, Westerner, Hamburg, 1,100 bls. wood pulp.
Castle & Overton, Westerner, Rotterdam, 993 bls. wood pulp.
Castle & Overton, West Cawthorn, Hamburg, 1,100 bls. wood pulp.
E. J. Keller Co., Inc., Sac City, Rotterdam, 385 bls. rags.

NORFOLK IMPORTS

WEEK ENDING JUNE 7, 1924

Castle & Overton, Westerner, Rotterdam, 249 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING JUNE 7, 1924

Parsons & Whittemore, Bremerton, Hango, 83 rolls news print.
Paper House of Pennsylvania, by same, 2,635 rolls news print.
Paper House of Pennsylvania, by same, 25 cs. printing paper.
C. K. MacAlpine & Co., Gustavsholm, Gothenburg, 175 rolls wrapping paper.
C. K. MacAlpine & Co., by same, 47 bls. wrapping paper.
S. Birkenstein & Son, Nw. Miller, London, 120 bls. rags.
Anglo South American Bank, by same, 338 bls. rags.
G. M. Graves Co., by same, 67 bls. rags.
L. H. Abenheimer, W. Lashaway, Naples, 50 bls. old cottons.
A. H. Searle, by same, 55 bls. old cottons.
New York Trust Co., by same, 24 bls. old cottons.
Castle & Overton, Waukegan, Dunkirk, 473 bls. rags.
A. Brown & Sons, Waukegan, Havre, 136 bls. rags.
Congoleum Co., by same, 105 bls., rags.
Salomon Bros. & Co., by same, 523 bls. rags.
Katzenstein & Keene, Inc., by same, 89 bls. rags.
Katzenstein & Keene, Inc., Siamese Prince, Leith, 71 bls. rags.
Katzenstein & Keene, Inc., Manchester Port, Manchester, 72 bls. new cuttings.
Castle & Overton, Porta, Hamburg, 87 bls. rags.
Castle & Overton, Zarembo, Bordeaux, 480 bls. rags.
Castle & Overton, Legie, Hamburg, 326 bls. rags.
E. J. Keller Co., Inc., Fenchurch, Marseilles, 319 bls. rags.
E. J. Keller Co., Inc., Mexican, Kobe, 200 bls. rags.
E. J. Keller Co., Inc., Burgerdyk, Amsterdam, 111 bls. rags.
Salomon Bros. & Co., Waukegan, Havre, 176 coils old rope.
Castle & Overton, Westerner, Rotterdam, 135 bls. wood pulp.
Castle & Overton, Westerner, Hamburg, 685 bls. wood pulp.
Castle & Overton, W. Cawthorn, Hamburg, 1,375 bls. wood pulp.
Lagerloef Trading Co., Bremerton, Hango, 1,271 bls., 203 tons wood pulp.
Lagerloef Trading Co., by same, 112 bls., 14 tons wood pulp board.

BOSTON IMPORTS

WEEK ENDING JUNE 7, 1924

Katzenstein & Keene, Inc., Nessian, Manchester, 127 bls. new cuttings.
Katzenstein & Keene, Inc., Naperian, London, 22 bls. new cuttings.
Castle & Overton, by same, 14 bls. waste paper.
E. Butterworth & Co., Inc., Nessian, Manchester, 241 bls. rags.
E. Butterworth & Co., Inc., by same, 39 bls. bagging.
E. Butterworth & Co., Inc., by same, 310 bgs. hide cuttings.
T. M. Duche & Sons, Tiradentes, Buenos Aires, 417 bgs., 25,020 ks. casein.
First National Bank of Boston, by same, 1,168 bgs., 70,080 ks. casein.
Lagerloef Trading Co., E. Coast, Hango, 8,476 bls., 1,345 tons sulphite pulp.
Castle & Overton, Westerner, Rotterdam, 221 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING JUNE 7, 1924

Castle & Overton, Spaarndaur, Rotterdam, 27 bls. rags.
Castle & Overton, Bruxelles, Havre, 496 bls. rags.
Castle & Overton, W. Cawthorn, Rotterdam, 550 bls. wood pulp.

MONTREAL IMPORTS

WEEK ENDING JUNE 7, 1924

Katzenstein & Keene, Inc. Valacia, London, 253 bls. rags.

IN TRANSIT TO CANADA

Kalbfleisch Corp., Pan America, Buenos Aires, 334 bags casein.

Eddy Stockholders to Deposit Holdings

KALAMAZOO, Mich., June 9, 1924.—Preferred stockholders of the Eddy Paper Company of Michigan, who are interested in the legal battle now being waged to have the entire 31,250 shares of stock in the Eddy Paper Corporation of Illinois made over to them, are instructed to deposit their individual holdings with the First National bank of Paw Paw.

Letters to that effect have been issued by David Anderson and J. H. Cavanaugh, attorneys for the plaintiffs, giving instructions as regards the methods of depositing the stock, also announcing the Paw Paw bank as repository.

The original case was heard before Judge Clayton Johnson in the Van Buren County Circuit court. David Anderson and J. H. Cavanaugh, of Paw Paw and Claude S. Carney, of Kalamazoo appeared for the plaintiffs and Harry C. Howard of Kalamazoo for the Eddy Paper Corporation of Illinois. Time was given by the court for the preparation of further briefs.

This action was the outgrowth of the purchase of all assets of the Eddy Paper Company of Michigan by the Eddy Paper Corporation of Illinois, the sale being authorized at a meeting held in the Kalamazoo-City Savings bank, Kalamazoo, in November, 1922. At that time the stockholders of the selling company voted to receive 31,250 no par shares in the Eddy Paper Corporation for 700,000 shares common stock and 177,500 shares of preferred stock in the original company.

Certain preferred stockholders attacked this action as illegal, declaring that all claims of the preferred stockholders must be satisfied before the rights of common stockholders are considered. They have further maintained that at the time of the transfer that the holdings in the new corporation would not meet these preferred claims.

Pose for Pictures of Old-Time Paper Making

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., June 3, 1924.—Four of the employees of the Papermakers Chemical Company of Willimansett posed in moving picture one day last week in which the role of papermakers of the 14th century was enacted by them. These pictures represent one phase of an educational film that will portray the making of paper from the earliest times and which is being produced by the General Electric Company.

This Willimansett Company had an exhibit in the Grand Central Palace last month at the second annual paper industries exposition in which the making of paper centuries ago was illustrated. This exhibit attracted much attention; and the General Electric Company thought it worth while to send three men here with complete moving picture outfit to take it.

Each step in the making of paper in the early days was gone through with by the employees chosen and taken or "screened" as the technical terms goes. Powerful electric lights were used and some good pictures are expected. The history of papermaking is understood to be complete with the exception of the period when the Chinese produced paper from the inner bark of certain trees and plants.

Greece's Paper Imports

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 4, 1924.—Greece imported 2,917 tons of news print paper last year, according to a report to the Department of Commerce from Consul General Lowrie at Athens, of which the bulk came from Italy and Germany. The principal kinds in demand are glazed and unglazed watermarked paper, the report states.

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CONTENTS

PAPER AND PULP MILLS

All the Paper, Wood Pulp and Chemical Fibre Mills in the United States, Canada, Cuba, Mexico and South America, geographically arranged, with the names of officers; a complete statement of mill equipment; kind of power used, product of mills, and total production per 24 hours.

MILLS CLASSIFIED ACCORDING TO PRODUCTS

All the mills making the same kinds of paper, boards or pulp are brought together under headings descriptive of their products.

PAPER STOCK AND RAGS CONSUMED BY THE MILLS. (NEW SECTION THIS YEAR)

Gives a list of the grades of paper stock and rags consumed by each of the more important mills in the United States and Canada, together with the names of the purchasing agents of these materials.

MAKERS OF PAPER SPECIALTIES

Giving the names of concerns that convert paper to special purposes.

PAPER DEALERS

Wholesale paper houses with indicating marks telling whether the business is done through stores or from warehouse or mill direct; large concerns selling paper as a side line are also included.

PULP, RAG AND PAPER STOCK DEALERS

Names of houses dealing in rags, old papers, pulp, etc., including importers.

CONVERTERS OF PAPER

Included under this heading are those concerns that turn out the following products: Glazed Papers, Coated Papers and Boards, Waxed and Parchment Papers, Toilet Papers, Saturators of Roofing Stock, Paper Bags, Paper Boxes, Envelopes, Pads and Tablets, Tags, Wallpapers, etc.; also a list of Twine Manufacturers.

WHOLESALE AND RETAIL STATIONERS

Leading Stationers and others handling stationery in the United States, Canada, Cuba, Porto Rico and the Philippine Islands. The list printed is considered the most complete and most accurate published.

WATERMARKS AND BRANDS

All the leading titles used in the American Paper Trade are included.

WHO'S WHO IN THE PAPER INDUSTRY

This list includes all the prominent mill officials, together with their connections.

TRADE ASSOCIATIONS, STATISTICAL INFORMATION AND ADVERTISEMENTS

the latter comprising a most complete guide to the sources of supply for machinery and Raw Materials used in the industry.

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Market Quotations

PAPER SECURITIES CLOSING PRICES TUESDAY

Reported by Stewart Tuttle & Co., Inc., 120 Broadway, New York

Stocks	BID	ASKED
Abitibi Power and Paper Company, Ltd.	56	56⅛
Abitibi Power and Paper Company, Ltd, Pfd.	100½	101
American Writing Paper Company, Pfd.	2½	2¾
Brompton Pulp and Paper Company, Ltd.	29	29½
Donnacona Paper Company, Ltd.	45	50
Donnacona Paper Company, Ltd., Pfd.	98	100
International Paper Company	48⅛	48⅜
International Paper Company, Pfd.	71	72
Laurentide Company, Ltd.	86	87½
Price Brothers	40½	41
St. Maurice Paper Co., Ltd.	87	89
Smith (Howard) Paper Mills, Ltd.	53	54
Spanish River Pulp and Paper Mills, Ltd.	103½	103¾
Spanish River Pulp and Paper Mills, Pfd.	112	113
Union Bag and Paper Corp.	50	55
Wayagamack Pulp and Paper Company, Ltd.	32	33
West Virginia Pulp and Paper Company	50	53

Bonds	BID	ASKED
Abitibi Power and Paper Company, Ltd., 1st 6s, 1934	99	101
Abitibi Power and Paper Company, Ltd., Gen. 6s 1940	92	94
Abitibi Power and Paper Company, Ltd., Con. 8s 1931	102½	103½
Belgo Canadian Paper Company, 1st 6s 1943	93½	94½
Brown Company Serial 6s	98	99½
Carthage Sulphite Pulp and Paper Company, 1st 8s 1941	35	50
Continental Paper and Bag Mills Corporation, 1st and Ref. 6½s, Series "A," 1944	93	95
Donnacona Paper Company, Ltd., 1st 6s 1940	97¾	98¾
Eddy Paper Company, 1st 7½s 1931	96½	98½
Gair (Robert) Company, 1st 7s 1937	93	95
International Paper Company, 1st and Ref. 5s (Series "B") 1947	84½	85½
Mattagami Pulp and Paper Company, 1st 6s 1937	58	60
Mattagami Pulp and Paper Company, 1st 7s 1949	20	25
Oswego Falls Corporation, 1st 8s 1942	100¾	101¾
Oxford Paper Company, 1st and Ref. 6s (Series "A") 1947	96	99
Parker, Young Company, 1st 6½s 1944	95½	97½
Paterson Parchment Paper Company, 1st 6s (Series "A") 1938	95½	97
Peshtigo Paper Company, 1st 7s (Series "B") 1942	92	94½
Price Bros. & Co., Ltd., 1st 6s (Series "A") 1943	95½	97
Provincial Paper Mills, Ltd., 1st 6s 1940	98	100
Riordon Pulp and Paper Company, Ltd., Gen. 6s 1929	11	15
Riordon Pulp and Paper Company, Ltd., 6s 1942	75½	77½
Riordon Company, Ltd., 1st and Ref. 8s 1940	72½	74½
River Raisin Paper Company, 1st 8s 1936	103½	104½
Smith (Howard) Paper Mills, Ltd., 6s 1934	95	95¾
Smith (Howard) Paper Mills, Ltd., 1st Ref. 7s 1941	92½	95
Spanish River Pulp and Paper Mills, Ltd., 1st 6s 1931	101	103
Spanish River Pulp and Paper Mills, Ltd., Gen. 8s 1941	102¾	103¾
Wayagamack Pulp and Paper Company, Ltd., 1st 6s 1951	74	77

Paper

F. o. b. Mill		
Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@30.00
Superfine	14.00	@30.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.75	@ 4.00
Rolls, transit	3.75	@ 4.25
Sheets	4.25	@ 4.50
Side Runs	3.25	@ 4.00
Book, Cased—		
S. & S. C.	7.25	@ 9.00
M. F.	7.10	@ 8.85
Coated and Enamel	9.00	@14.00
Lithograph	9.00	@14.00
Tissues—		
White No. 1	.75	@ .76
White No. 2	.70	@ .80
Colored	1.05	@ 1.90
Anti-Tarnish	1.35	@ 1.90
Kraft	.85	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	5.50	@ 6.25
No. 2 Domestic	5.00	@ 5.75
Imported	4.75	@ 5.20
Manila—		
No. 1 Jute	7.50	@ 9.00
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	4.00	@ 4.50
Fibre Papers—		
No. 1 Fibre	5.50	@ 5.75
No. 2 Fibre	4.75	@ 5.25
Common Bogus	3.50	@ —
S. Screening	3.25	@ 3.75
Card Middles	4.00	@ 5.00

Boards—per ton—		
News	40.00	@55.00
Straw	40.00	@45.00
Chip	37.50	@42.50
Binders' Boards	70.00	@75.00
Sgl. Mla. Ll. Chip	52.50	@57.50
Wood Pulp	70.00	@75.00
Container	57.50	@65.00
Sulphate Screenings—		
Coarse	.80	@ .90
Refined	1.75	@ 2.00
Ground Wood—		
Screenings	20.00	@25.00
Glassine—		
Bleached, basis 25 lbs.	12.00	@15.00
Bleached, basis 20 lbs.	14.00	@17.00

Mechanical Pulp

(Ex-Dock)		
No. 1 Imported	35.00	@40.00
(F. o. b. Mill)		
No. 1 Domestic	27.50	@34.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)		
Sulphite (Imported)—		
Bleached	3.75	@ 4.50
Easy Bleaching	2.90	@ 3.10
No. 1 strong unbleached	2.60	@ 2.80
No. 2 strong unbleached	2.20	@ 2.40
No. 1 Kraft	2.50	@ 2.85
Sulphate—		
Bleached	3.50	@ 3.65
(F. o. b. Pulp Mill)		
Sulphite (Domestic)—		
Bleached	3.50	@ 4.50
Easy Bleaching Sulphite	2.50	@ 2.90
News Sulphite	2.40	@ 2.60
Mitscherlich	3.00	@ 3.50
Kraft (Domestic)	2.40	@ 3.55
Soda Bleached	3.90	@ 4.10

Domestic Rags

New Rags

Prices to Mill, f. o. b. N. Y.		
Shirt Cuttings—		
New White, No. 1	13.00	@13.50
New White, No. 2	6.25	@ 6.75
Silesias, No. 1	7.50	@ 8.00
New Unbleached	10.50	@11.00
Washables	5.50	@ 6.15
Fancy	6.50	@ 7.00
Blue Overall	8.00	@ 8.50
New Blue	5.50	@ 6.00
New Black Soft	4.65	@ 5.15
New Light Seconds	3.00	@ 3.25
O. D. Khaki Cuttings	4.75	@ 5.00
Men's Corduroy	4.00	@ 4.25
New Canvas	7.00	@ 7.50
New Black Mixed	2.75	@ 3.00

Old Rags

White, No. 1—		
Repacked	6.50	@ 7.00
Miscellaneous	5.50	@ 5.75
White, No. 2—		
Repacked	4.25	@ 4.50
Miscellaneous	3.75	@ 4.00
St. Soiled, White	2.80	@ 3.00
Thirds and Blues—		
Repacked	3.62½	@ 3.87½
Miscellaneous	2.90	@ 3.15
Black Stockings	3.75	@ 4.00
Roofing Rags—		
Cloth Strippings	1.90	@ 2.00
No. 1	1.80	@ 1.90
No. 2	1.60	@ 1.70
No. 3	.75	@ .85
No. 4	.90	@ 1.00
No. 5A	1.50	@ 1.60

Foreign Rags

New Light Silesias	7.50	@ 8.75
Light Flannelettes	8.00	@ 8.25
Unbl'chd Cottons	9.00	@ 9.50
New White Cuttings	11.50	@12.50
New Light Oxfords	7.75	@ 8.25
New Light Prints	7.25	@ 7.75
New Mixed Cuttings	3.25	@ 3.75
New Dark Cuttings	3.00	@ 3.50
No. 1 White Linens	9.00	@10.00
No. 2 White Linens	7.00	@ 8.00
No. 3 White Linens	6.00	@ 6.50
No. 4 White Linens	4.50	@ 5.50
Old Extra Light Prints	4.00	@ 4.50
Ord. Light Prints	3.00	@ 3.50
Med. Light Prints	2.40	@ 2.50
Dutch Blue Cottons	3.50	@ 4.00
Ger. Blue Cottons	3.00	@ 3.25
Ger. Blue Linens	3.50	@ 4.00
Checks and Blues	2.25	@ 2.50
Dark Cottons	1.50	@ 1.75
Shoppery	1.40	@ 1.60
French Blues	3.25	@ 3.75

Bagging

Prices to Mill F. o. b. N. Y.		
Gunny No. 1—		
Foreign	1.60	@ 1.70
Domestic	1.55	@ 1.65
Wool, Tares, light	1.40	@ 1.50
Wool, Tares, heavy	1.45	@ 1.55
Bright Bagging	1.15	@ 1.25
Sound Bagging	.90	@ 1.00
Manila Rope—		
Foreign	6.25	@ 6.50
Domestic	6.50	@ 6.75
New Bu. Cut	2.40	@ 2.60
Hessian Jute Threads—		
Foreign	2.40	@ 2.60
Domestic	2.10	@ 2.20

Old Waste Papers
(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.25	@ 3.60
Hard, White, No. 2	2.90	@ 3.10
Soft, White, No. 1	2.45	@ 2.70
Flat Stock—		
Stitchless	1.30	@ 1.40
Over Issue Mag.	1.35	@ 1.45
Solid Flat Book	1.20	@ 1.30
Crumpled No. 1	1.90	@ 1.00
Sclid Book Ledger	1.80	@ 1.90
Ledger Stock	1.30	@ 1.40
New B. B. Chips	1.60	@ 1.70
Manilas—		
New Env. Cut	2.45	@ 2.55
New Cut. No. 1	1.65	@ 1.90
Extra No. 1 old	1.30	@ 1.40
Print	.80	@ .90
Container Board	.60	@ .70
Bogus Wrapper	.60	@ .70
Old Krafts Machine compressed bales	1.65	@ 1.75
News—		
No. 1 White News	1.65	@ 1.75
Strictly Overissue	.80	@ .90
Strictly Folded	.60	@ .70
No. 1 Mixed Paper	.50	@ .60
Common Paper	.35	@ .40

Twines

Cotton—(F. o. b. Mill)—		
No. 1	.43	@ .48
No. 2	.41	@ .43
No. 3	.40	@ .42
India, No. 6 basis—		
Light	.17	@ .18
Dark	.16	@ .17
B. C., 18 basis	.41	@ .42
A. B. Italian, 18 Basis	.51	@ .61
Finished Jute—		
Dark, 18 basis	.26	@ .28
Light, 18 basis	.28	@ .30
Jute Wrapping, 3-6 Ply—		
No. 1	.20	@ .23
No. 2	.18	@ .20
Tube Rope—		
6-ply and larger	.15	@ .17
Fine Tube Yarn—		
5-ply and larger	.20	@ .28
4-ply	.21	@ .24
3-ply	.22	@ .25
Unfinished India—		
Basis	.14	@ .15
Paper Makers' Twine		
Balls	.11	@ .13
Box Twine, 2-3 ply	.14	@ .15
Jute Rope	.15	@ .16
Amer. Hemp, 6	.30	@ .32
Sisal Hay Rope—		
No. 1 Basis	.14	@ .16
No. 2 Basis	.10	@ .12
Sisal Lath Yarn—		
No. 1	.14	@ .15
No. 2	.11	@ .13
Manila Rope	.18	@ .19

CHICAGO

[FROM OUR REGULAR CORRESPONDENT]

Paper

F. o. b. Mill		
All Rag Bond	35	@ 40
No. 1 Rag Bond	25	@ 35
No. 2 Rag Bond	14	@ 25
Water Marked Sulphite	9	@ 12
Sulphite Bond	7¼	@ 10¾
Sulphite Ledger	9½	@ 12
Superfine Writing	18	@ 24
No. 1 Fine Writing	14	@ 18
No. 2 Fine Writing	12	@ 14
No. 3 Fine Writing	9	@ 12
No. 1 M. F. Book	5¼	@ 7½
No. 1 S. & S. Co. Book	6¼	@ 7¾
Coated Book	8	@ 10
Coated Label	8	@ 10
News—Rolls, mill	3¼	@ 4½
News—Sheets, mill	4	@ 4¾
No. 1 Manila	4¾	@ 5
No. 1 Fibre	4¾	@ —
No. 2 Manila	3½	@ 4
Butchers' Manila	4¼	@ 4½
No. 1 Kraft	6	@ 6½
No. 2 Kraft	5	@ 5½
Wood Tag Boards	4½	@ 6
Screenings	2¾	@ —
Boards, per ton—		
Plain Chip	$35.00	@37.50
Solid news	37.50	@42.50
Manila Line Chip	47.50	@52.50
Container Lined—		
85 Test	57.50	@62.50
100 Test	62.50	@67.50

Old Papers

F. o. b. Chicago		
Shavings—		
No. 1 Hard White	3.00	@ 3.00
White Envel. Cuttings	3.00	@ 3.00
No. 1 Soft Shav.	2.65	@ 2.75
No. 1 Mixed	1.25	@ 1.35
No. 2 Mixed	1.15	@ 1.25
Ledgers and Writings	1.45	@ 1.50
Solid Books	1.35	@ 1.40

No. 1 Books, Light.	1.25	@	1.30
Blanks	1.65	@	1.75
Ex. No. 1 Manila..	1.90	@	2.00
Manila Envelope Cuttings	2.10	@	2.15
No. 1 Manilas...	95	@	1.00
Folded News (over issue)	.85	@	.90
Old Newspapers—			
No. 1	.80	@	.85
No. 2	.65	@	.70
Mixed Papers—			
No. 1	.65	@	.70
No. 2	.55	@	.60
Straw Clippings	.80	@	—
Binders' Clippings..	.80	@	—
Kraft	1.90	@	2.00
New Kraft Cuts...	2.10	@	2.15
Roofing Stock, f. o. b. Chicago, Net Cash—			
No. 1	$33.00	@	—
No. 2	31.00	@	—
No. 3	29.00	@	—
No. 4	29.00	@	—

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.09½	@	.53
Ledgers	.15	@	.40
Writings—			
Superfine	.15	@	.20
Extra fine	.12	@	.22
Fine	.20	@	.30
Fine, No. 2	.20	@	.25
Fine, No. 3	.15	@	.20
Book, M. F.	.09¼	@	.12¼
Book, S. S. & C..	.11	@	.15
Book, Coated	.14¼	@	.20
Coated Lithograph.	.10	@	.13
Label	.10	@	.15
News	.05	@	.07
No. 1 Jute Manila	.12	@	.13
Manila Sul., No. 1	.08	@	.10
Manila No. 2	.07½	@	.08
No. 2 Kraft	—	@	.08½
No. 1 Kraft	—	@	.09½
Common Bogus	.03½	@	.04
Shaw Board	55.00	@	60.00
News Board	42.50	@	45.00
Chip Board	40.00	@	45.00
Wood Pulp Board. (Carload Lots)	2.75	@	3.00
Binder Boards—			
Per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1-ply (per roll)	1.70	@	1.80
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply.	2.00	@	2.10

Bagging

F. o. b. Phila.

Gunny No. 1—			
Foreign	1.45	@	—
Domestic	1.50	@	—
Manila Rope	6.00	@	6.50
Sisal Rope	1.25	@	—
Mixed Rope	1.30	@	—
Scrap Burlaps	1.00	@	1.25
Wool Tares, heavy.	2.00	@	2.13
Mixed Strings	1.30	@	—
No. 1, New Lt. Burlap	2.00	@	—
New Burlap Cuttings	2.00	@	2.25

Old Papers

F. o. b. Phila.

Shavings—			
No. 1, Hard White	4.00	@	4.10
No. 2, Hard White	3.25	@	3.50
No. 1 Soft White	3.00	@	3.10
No. 2 Soft White	1.75	@	2.00
No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50
Solid Ledger Stock.	2.00	@	2.25
Writing Paper	2.00	@	—
No. 1 Books, heavy	1.80	@	1.90
No. 2 Books, light	1.40	@	1.50
No. 1 New Manila.	2.50	@	2.60
No. 1 Old Manila..	1.75	@	2.00
Container Manila...	1.20	@	1.25
Old Kraft	2.25	@	2.50
Overissue News....	1.25	@	1.35
Old Newspaper.....	.75	@	.80
No. 1 Mixed Paper.	.70	@	.75
Common Paper.....	.50	@	.60
Straw Board, Chip.	.75	@	.80
Binders Bd., Chip..	.75	@	.80

Domestic Rags—New.

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.12½	@	.13½
New White, No. 2	.06	@	—
Silesias, No. 1	.08¼	@	.08½
New Unbleached.	.11	@	.11½
Washable	.05	@	.05½
Fancy	.06½	@	.06¾
Cottons—according to grades—			
Blue Overall	.08¾	@	.09
New Blue	.03¾	@	.04
New Black Soft.	.06	@	.06¾
New Light Seconds	.03½	@	.03¾
Khaki Cuttings..	.05½	@	.06
Corduroy	.04	@	.04½
New Canvas	.10½	@	.11
New Black Mixed	.05¼	@	.05½
Old White, No. 1—			
Repacked	5.75	@	6.00
Miscellaneous	.05	@	.05½
White, No. 2—			
Repacked	.04½	@	.04¾
Miscellaneous	.04¼	@	.04½
Thirds and Blues—			
Repacked	3.75	@	—
Miscellaneous	3.00	@	—
Black Stockings..	4.00	@	4.50
Roofing Stock—			
No. 1	1.75	@	1.85
No. 2	1,65	@	1.75
No. 3	1.15	@	1.20
No. 4	1.25	@	1.35
No. 5A	1.40	@	—
B	1.25		nominal
C	1.15		nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.09	@	.63
Ledgers	.09	@	.55
Writings	.08½	@	.42
Superfine	.16	@	.26
Fine	.15	@	.18
Books, S. & S. C..	.07¼	@	.12
Books, M. F.	.07¼	@	.09½
Books, coated	.09	@	.15
Label	.09	@	.13
News, sheets	4.75	@	6.00
News, rolls	4.00	@	4.50
Manilas—			
No. 1 Manila	6.00	@	7.00
No. 1 Fiber	.06½	@	.07
No. 1 Jute	9.00	@	10.50
Kraft Wrapping...	.07	@	—
Common Bogus....	3.50	@	3.85

Boards

(Per Ton Destination)

Chip	42.50	@	45.00
News, Vat Lined..	44.00	@	45.00
Wood, Vat Lined..		@	52.50
Filled News Board.	45.00	@	47.50
Solid News Board, No. 4 Finish....	60.00	@	—
S. Manila Chip....	57.50	@	62.50
Pat. Coated News..	75.00	@	85.00

Old Papers

Mixed paper	.50	@	.55
Folded news	.62½	@	.65
Soft white shavings	2.60	@	2.75
Hard white shavings	3.50	@	3.75
Kraft paper	1.90	@	2.00
Ledger and letter..	2.15	@	2.35
No. 1 books and magazines	1.35	@	1.50
Manila paper No. 1	1.70	@	1.75
Solid ledgers	2.50	@	2.75
No. 1 roofing rags.	1.65	@	1.70
No. 2 roofing rags.	1.50	@	1.60
No. 3 gunny bagging	.75	@	.85
No. 4 Brussels and hard back carpets,	1.60	@	1.70
No. 5 roofing rags			
A's	.90	@	1.00
B's		@	
C's		@	
No. 6 City dump rags		@	
Manila rops, domestic	.6	@	.6¼
Mixed strings	1.20	@	1.35
ite strings		@	1 50

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted	.12	@	.13½
Dark tinted	.13½	@	.15
Ledgers (sulphite).	—	@	.13
Writing	.09½	@	.12
News, f. o. b. Mills—			
Rolls (carloads)..	3.75	@	—
Sheets (carloads)	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	9.00	@	—
No. 2 M. F. (carloads)	8.00	@	—
No. 3 M. F. (carloads)	7.50	@	—
No. 1 S. C. (carloads)	9.50	@	—
No. 2 S. C. (carloads)	8.50	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rag	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood	$29.00	@	30.00
Sulphite easy bleaching	55.00	@	60.00
Sulphite news grade	50.00	@	55.00
Sulphite, bleached.	75.00	@	80.00
Sulphite	60.00	@	65.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut..	3.60	@	—
Soft White Book shavings	2.80	@	—
White Blk. News.	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock(old)	1.35	@	—
Light and Crumpled Book Stock	1.20	@	—
Ledgers and Writings	1.68	@	—
Solid Ledgers	2.00	@	—
Manilas—			
New Manila Cut.	—	@	1.60
Printed Manilas..	1.10	@	—
Kraft	2.05	@	—
News and Scrap—			
Strictly Overissue.	.80	@	—
Folded News	.80	@	—
No. 1 Mixed Papers	—	@	.40

Domestic Rags—
Price to mills, f. o. b. Toronto
Per lb.

No. 1 White shirt cuttings	.13¼	@	.13½
No. 2 White shirt cuttings	.06½	@	.07
Fancy shirt cuttings	.06½	@	.06¾
No. 1 Old Whites		@	
Third and blues..	.04¾	@	.05

Per cwt.

Black stockings...	.03	@	—
Roofing stock:			
No. 1	—	@	—
No. 2	—	@	—
Manila rope	.06½	@	.06¾
No. 2	1.55	@	—

HADLEY MILL PROPERTY SOLD

(Continued from page 23)

creditors. We are making this bid simply to see if we cannot save some of our money but it seems to me that we should be satisfied on the title. We would not withdraw because of any slight technical flaw but if there should be anything really serious I do not think we should be held."

"In such a case," said counsel for the trustee, "I do not say that you would not have redress at law."

Mr. Wait was prevailed to let his bid stand until 2 o'clock in the afternoon. Recess was taken until that time. When the interested parties reconvened an understanding had been effected and the Deiters bid was accepted. Rosenberg & Ball, counsel for the trustee, informed the PAPER TRADE JOURNAL that the buyers had decided to take their chances on the title.

Mr. Wait was asked by a PAPER TRADE JOURNAL representative as to the parties he represented. He declined to say. Mr. Deiters was interviewed as to the plans of the buyers of the property but said he had no announcement to make at this time.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 11, 1924.—The Government Printing Office will receive bids on June 13 for 36,000 pounds of wood manila tag board in 21¾ inch rolls.

The Bureau of Supplies and Accounts of the Navy Department will receive bids on June 17, for 3,000 various sizes strawboard shipping containers.

The Government Printing Office has received the following bids for 10,000 pounds of 25 x 38 inch end paper:

Samuel S. Alcorn $.0825 per lb.; R. P. Andrews $.0774; American Writing Paper Company $.082; Reese & Reese $.08435; Old Dominion Paper Company $.0719; and .0899 and $.0949; Maurice O'Meara Company $.0809; The Broderick Paper Company $.07.

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, June 11, 1924.

Paper men were in a slightly more cheerful mood this week, not because of any real improvement in conditions of the paper market but because of certain significant facts which indicate that the sun may break through the clouds before many days. It is true that every line, with the exception of news print, business is just staggering along about as it has been doing for weeks. Orders are not coming along any stronger than they have been coming but the past week brought the paper men a much greater number of inquiries than had been received in any one week for some time. Next to actual orders inquiries are welcomed by the paper men for they indicate that many who have not made up their minds for instant buying are now reaching the point where they anticipate buying at an early date. It has been evident for a long time that the market could not continue indefinitely in the condition which has already prevailed so long but opinions have varied greatly as to when the break could reasonably be expected. Several prominent paper men predicted this week that the time was close at hand. If this is true an improvement may be looked for before long and it will be no trifling improvement. Buyers have adhered so closely to the hand-to-mouth buying principle that, when they do cut loose, a veritable avalanche of orders can reasonably be looked for. Another reason why paper men anticipate an immediate change for the better is that the political conventions will soon be a thing of the past. The convention should do much to allay political doubts in the minds of American business and to clarify the atmosphere for better conditions in every line of business. This all creates a new element of hopefulness in the market and leaves the off-summer season as the most discouraging condition for the market to contend with in-as-much as normal dullness is one thing that it is impossible to overrule.

There has been a slight slackening of demand for news print but it has been only slight and hardly worth commenting on in view of the phenomenal pace news print has kept up through thick and thin. There has been no time when the demand for news print has reflected anything of the sluggishness general to the market and paper men declare that its record during these trying weeks of poor business has been unprecedented. A little relaxation is naturally expected in the summer months for during the vacation period the public does less reading, newsprint sales fall off and many of the big papers curtail their editions and lop off their supplements.

Board prospects are very encouraging. There is a little better demand and many inquiries from buyers have reached the market the past week and presage some large buying to be done soon.

Tissues are holding about the same demand and kraft and manila are not experiencing any spurt in activity.

The higher grade papers are enjoying a slightly better demand if anything. Ledgers, bonds, writing and book papers are all receiving fair call, contract business continuing good although the open market is not over brisk. Prices on all lines remain, as a general rule firm, although sales are being made in most of them at prices covering considerable range.

Mechanical Pulp

The mechanical pulp market has undergone no change. The demand is said to be just fair with no particular indication of being much better for some time. The prices remain unchanged.

Chemical Pulp

The chemical pulp market has showed a marked improvement. A very generous amount of business is being done in all kinds of pulp and the pulp men are quite well satisfied with conditions as they stand. The opening of navigation on the Baltic occurred some time ago and shipments from Sweden will pour into the American market before long.

Old Rope and Bagging

Old rope and bagging remain firm. There is a lively demand for the best packings and these are commanding a good price. The prices are showing a tendency to move upward and a few sales have been reported during the past week at a slight advance on the prices quoted in this issue.

Rags

There is a little better demand for rags but the market is still spotty. The mills, however, are showing more interest in all grades and a marked improvement is looked for. The lower grades have showed a slight softening in prices and roofing rags are at a lower level than they have been.

Waste Paper

Hand to mouth buying of the most exacting description prevails in the waste paper market but, in spite of that fact, there are orders in the market for all grades. None of the grades has shown any lowering of prices during the week. Most of the buying is coming at this time from the West.

Twine

Twine refuses to look up. It has been in sluggish demand for a long time and little relief from the sluggishness is looked for for some weeks to come. Prices are low but their lowness does not appear to stimulate buying. Dealers complain of the poor business and declare that higher prices are justified and that they cannot understand the lethargy.

SOURCES OF PULP IN NORTH AMERICA

(*Continued from page* 38)

Fournier, Raymond	Plants Suitable as Raw Material for Paper Making. *Paper Industry*, Feb., 1922, p. 1532.
	Aquatic Reeds and Rushes. *Paper.*
	Cotton Linters and Paper Making. *Paper Makers Monthly Journal.* Jan, 1922, p. 8.
	Possibilities of New Fibers for Pulp and Paper Making. *Paper*, July 28, 1920, p. 11.
	Improved Process for Manufacture of Esparto Pulp. *Paper*, Aug. 18, 1920, p. 22.
	To Make Paper in Mexico from Henequin Plant. PAPER TRADE JOURNAL, June 8, 1922, p. 58.
	Use of Bamboo. PAPER TRADE JOURNAL, May 18, 1922, p. 32.
	Sunflower as a Source of Pulp. *Chemical Abstracts*, 15, p. 1809.
Dodge, Chas. R.	Descriptive Catalog of Useful Fiber Plants of the World. U. S. D. A. Special Report No. 9.
La Forge, Dr. F. B.	Corn Cob Utilization. *Chemical Age*, Vol. 28, p. 332.
Veitch, F. P.	Paper Making Materials and Their Conservation. U. S. D. A. Bureau of Chem. Circ., 41.
	Manufacture of Esparto Pulp. PAPER TRADE JOURNAL 19, p. 58.
	Giant Grasses for Paper Making. *Paper Making*, 61, No. 2, p. 62 (Feb. 1922).
Groud, Chas.	Andropogons as Paper Making Materials. PAPER TRADE JOURNAL, 75, p. 305.
	Pulp from Reeds. *World's Paper Trade Rev.*, 77, No. 14, p. 1084, April 7, 1922.
Arnould	Straw Pulp. PAPER TRADE JOURNAL, 75, No. 25, p. 58.
Groud, C.	Uses of Cereal Straws. PAPER TRADE JOURNAL, 75, No. 10, p. 50.
Barbillon	New Fibers. *Paper*, XXVI, No. 21, July 28, 1920.
Groud, C.	Aquatic Plants and Marsh Grasses. *Paper*, XXIII, pp. 153-157 (1920)
	Blady Grass. *World's Paper Trade Review*, XXIII, No. 3, p. 182. June 16, 1920.
	Baobab. *World's Paper Trade Review*, IXXIII, No. 4, p. 278, July, 1920.
	Brcom. *World's Paper Trade Review*, LXXIV, No. 6, p. 502. Aug. 6, 1920.
	Corn Cobs. *Chemical Age*, XXVIII; *Paper*, XXVII, Dec. 2, 1920.
	Dwarf Palm, Esparto, *Paper*, XXV, No. 24, p. 22, Aug. 18, 1920.
	Florida Saw Grass. *Paper*, XXVII, Sept. 17, 1920.
	Feat. *Paper*, XXVI, No. 26, p. 12.
	Ramie. *Paper*, XXVI, No. 18, pp. 15, 30, July 7, 1920.
	Sugar Beet Waste. *World's Paper Trade Review*, LXXIV, No. 15, p. 1314, Oct. 8, 1920.

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Kronstädter Papierstoff—Fabriks Actien—Gesellschaft
Mills at Tucianský, Sv. Martin

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, JUNE 11, 1924.

New weakness with a tendency to further weakness has developed in the chemical market which is almost speaking in the superlative in view of the conditions which have prevailed for some time. The present state of affairs is plainly due to a combination of circumstances. In the first place it is the off-season for chemicals, in the second place business conditions throughout the country are none too good and in the third place there is the old presidential year fallacy to contend with. Prices remain firm and are holding up in spite of the fact that there is so little demand. In fact the absence of price cutting is the redeeming feature of the market at this particular stage, dealers apparently being of the unanimous opinion that the cutting of prices would not be good business and that the artificial demand which might be created would be too slight to angle for. It is clear to most of them that the buyers have made a cast-iron resolve not to buy under any except compulsory circumstances. The needs of the hour, whatever they may be, must be met but outside of that no interest is exhibited and it is doubtful if any interest could be aroused. There is more than one evidence of that but perhaps the best is seen in the fact that, though distress tonnage of several commodities has been thrown on the market at especially attractive prices, it has remained untouched. It looks as though the buyers and dealers would fight it out on this line if it takes all summer, which it probably will do. As has been the case for several weeks now the demand from the paper industry is practically nil and what little business is being done is coming from other sources, but orders from these sources even are becoming fewer and fewer as the days go by.

BLANC FIXE.—There has been no change in the price of blanc fixe and, while there has been a slight falling off in demand, there is still a better call than is common to the market at this writing. Most of it comes from the rubber industry and the painting trade. The price is from $75 to $80 a ton.

BLEACHING POWDER.—The price on bleaching powder is holding up but there has been little demand for a week or so and a falling off from that slight demand was noticeable during the past week. There is no price cutting, however, and the chance buyer has the option of taking it or leaving it at the figure which was quoted a week ago. Curtailed production in the textile industry is probably responsible for the falling off in demand. The price is from 1.90 to 2.15 cents a pound.

CAUSTIC SODA.—Caustic soda is in better demand than most commodities. Little call for it is coming from the paper industry, however. The price is 3.10 cents a pound on a flat basis at the works.

CASEIN.—A few distress lots of casein have entered the market and went at a low figure, but the market price remains unchanged. The demand has shown a falling off. The price remains at from 10½ to 11 cents a pound.

CHINA CLAY.—There has been no change in china clay. Such demand as exists comes almost entirely from the pottery trade and it is none too voluminous to please the dealers. Imported grades are quoted at from $16 to $20 a ton and the domestic grades from $12 to $15 a ton.

CHLORINE.—Chlorine is one of the weakest factors in the market. There is little demand but prices are remaining firm. The quotation is from 4.50 to 7.00 cents a pound in tanks.

ROSIN.—Conditions are, if anything, a trifle better as far as rosin is concerned. There has been a trifle more buying the past week. The price is from $5.80 to $5.90 for 280 pounds.

SALT CAKE.—Salt cake which underwent a cut in price last week went another peg down the toboggan during the past week. This has not spurred buying to any extent, however. The price is now from $18 to $20 a ton.

SODA ASH.—Soda ash maintains the same condition as a week ago. The price holds up and the demand is slow. The price is 1.38 cents a pound on a flat basis at the works.

SULPHATE OF ALUMINA.—A couple of lots of imported high test iron free sulphate of alumina appeared in the market during the week and was snapped up at from 2.05 to 2.10 cents a pound. The price, however, is holding at from 1.30 to 1.35 cents for the commercial grade at the eastern works and from 2.15 to 2.40 cents a pound for iron free.

SULPHUR.—Sulphur enjoys a little better demand than is common to the market and the price still stands at from $18 to $19 a ton.

TALC.—There is no semblance of change affecting talc. The demand is just about as it has been for weeks and the price holds. It is quoted at from $16 to $17 a ton.

Strathmore Distributors Meet

WORANOCO, Mass., June 9, 1924.—About fifty executives, representing Strathmore distributing houses throughout the country gathered here on June 2 and 3. Mutual problems, sales policies, advertising possibilities and advantages were discussed both from the angle of the merchant as well as the manufacturer.

Monday morning was given over entirely to a meeting for the merchants only. Here were discussed ways and means for better co-operation among themselves as well as with Strathmore.

At noon all journeyed up the steep hillsides to H. A. Moses' farm at Woronoake Heights for a steak roast, a jolly hour of fun, target shooting, barnyard golf and inspection of a model dairy.

Advertising plans and service department possibilities were discussed Monday afternoon. Mr. Norton, Strathmore's advertising manager, spoke very interestingly on Strathmore's advertising. His talk was very aptly illustrated by charts and fourteen large attractive display boards. Henry Eckhardt of the Federal Advertising Agency then spoke on the necessity of linking up advertising with merchandising in order to turn advertising into sales. Following this E. W. Mielke of the Paper Mills' Company, Chicago told of the advantages of a service department. Mr. Dearden, Strathmore's sales promotion manager, finished the afternoon's program with some very worth while ideas of the service departments from the standpoints of the mill.

After this session the visitors were transported to the Hotel Kimball, Springfield, for dinner and an evening of entertainment.

Tuesday morning, Colonel B. A. Franklin, vice-president of Strathmore Paper Company spoke on "Making a Profit." The entire talk was decidedly worth while and each executive as he left for home that afternoon felt that he had gotten some real dope that he could use in shaping future sales policies.

IMPROVEMENT IN PHILADELPHIA

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and has not been able to be at his office for many months. Since the sale of the Huff Paper Company, he has been engaged in business trading as the Purity Specialty Company, distributors of the Purity sanitary cups, having taken over this department which formerly was a branch of the Huff Company.

Sends Out First Price List

With the completion of the stocking of its warehouses the newly organized Anderson Paper Company, which recently took over the warehouse and sales offices at 430 Race st., is now issuing its first price list of the specialties in which it will deal. The list shows a complete line of bristols embossed and plain cover papers, card boards for use by the printing and box trade, and is of 25 pages. It is attractively done up with blue cover on which is printed the gilt trade mark and title of the firm. Among the lines which the firm will carry are those of the Dove Mill, Commercial, American Writing Paper Company and other well known mill brands.